

# AIR CONDITIONING & REFRIGERATION

The Newspaper of the Industry

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## Inside Dope

By GEORGE  
F. TAUBENECK



Learn to live and laugh —  
thus delay your epitaph

### Story of the Week Investment In Boys and Girls

If You're on TV  
Adult Education  
Is It Claustrophobia?  
Puzzle Fans: Attention!  
Coming Up

### Story of the Week

Smoke and flames shot up from a farmhouse. Excitedly a passing motorist stopped his car, dashed up to the house, and pounded on the door.

"Your house is on fire!" he shouted.

"Eh? How's that?" an old lady responded.

"I say, your house is burning down," the man yelled.

Cupping her hand behind her ear, the old lady squeaked: "You'll have to speak up. I didn't get what you said."

Leaning forward our hero screamed into the woman's ear: "Your house is on fire! Your house is on fire!"

"Oh, is that all?" she pouted.

Speechless at this reaction, the man stuttered: "Well, uh, it's all I can think of right off hand."

"Goodnight, Elvis Presley, whatever you are."

### Investment In Boys and Girls

Every parent will be interested in this noble experiment.

Lennox Industries expects to spend up to \$50,000 to learn if a classroom "comfort curtain" of air conditioning will help educate the nation's schoolchildren faster.

John W. Norris, Lennox president, plans to build a two-room schoolhouse on the grounds of his Marshalltown, Iowa, plant to test the effects of temperature control on students' physical and educational development. Ground already has been broken for the project.

Eventually it will be fitted with Lennox heating and ventilation equipment designed to keep classroom temperatures within a 1° variance in all kinds of weather.

Mr. Norris intends to turn over his experimental project to the Des Moines school system (to house regular classes) as soon as the building is completed.

Lennox officials declare that they are interested primarily in the research aspects of the school. On the other hand they feel sure it will be useful either to Des Moines or to an adjoining.

(Concluded on Page 12, Col. 1)

## G-E '57 Room Units RACCA Plans Highlight Color, Electronic Filter 11th Convention In Fla. Nov. 24

LOUISVILLE, Ky. — Availability of color, an electronic filter, and a full 1-hp. room air conditioner operating on 115 volts distinguish the 1957 General Electric "Thinline" room air conditioners, the company has announced.

The new line, most extensive yet offered by General Electric, has more models and greater variety than ever before—all in the Thinline design introduced last year, "which eliminates bulky inside and outside projections and permits flexibility of installation," the company said.

Color adaptation to individual decorating schemes and the electronic filter are accessory developments for the Custom Thinline models. Color is

(Concluded on Page 31, Col. 1)

## Market Tests Vendor Battery On 24-Hr. Sales

EAST PATERSON, N. J. — Round-the-clock shopping has been introduced at Grand Union Co.'s headquarters market, opened here recently.

Grand Union is making a major test of supermarket use of automatic vending machines, with a battery of eight machines built into the front of the rebuilt, enlarged, and remodeled headquarters market.

At any time of day or night a shopper may purchase a variety of basic foods by placing the correct coins in slots. A coin changer is adjacent to the units, and a listing of each item and its price is on each unit.

Among products in the vend-

(Concluded on Back Page, Col. 4)

## 53 Mondays In 1956 —But Only 52 Issues

The 1956 calendar is a tricky one—for a publisher of a weekly periodical that comes out on a Monday. It has 53 Mondays, and two of them come on the day before a major holiday—Christmas and New Year's Day.

Because of all the complications resulting from this, plus the fact that the issue dated Dec. 24 won't be delivered in most instances until after Christmas, the 52nd and 53rd issues of the News will be combined into one, the Dec. 24 issue. No Dec. 31 issue will be published.

Be sure to watch for this special combination which will include the Annual Index of key editorial material which has been published in 1956.

CLEVELAND — A program designed to include many members of the group has been announced by the Refrigeration & Air Conditioning Contractors Association for its 11th annual convention, to be held Nov. 24-28 at the Balmoral hotel in Miami Beach, Fla.

Ray Kromer, executive vice president of RACCA, said the convention "is already destined to be the best yet from the standpoint of information, attendance, and interest." He added that the association's labor programs and policies will be thoroughly reviewed during the meeting.

The convention will get under way formally Monday morning, Nov. 26. The opening session will include a review of the trade relations participation program and short talks by member speakers on association activities.

Scheduled for Monday afternoon are presentation of labor committee recommendations; a talk by Joseph F. Monahan, Refrigeration & Air Conditioning Div., United Association; and a labor forum.

(Concluded on Back Page, Col. 1)

## ARI To Push Testing, Rating Packaged Units, Components

Will Act To Make Ratings More 'Meaningful'

## Mfr. Compressor Body Shipments Up 66% In July

WASHINGTON, D. C. — Manufacturers' shipments of compressor bodies used in air conditioning and refrigeration units were up 66% in July over July shipments a year ago, Geo. S. Jones, Jr., managing director of the Air-Conditioning & Refrigeration Institute reported recently.

The figures, which do not include compressors used in household refrigerators, were compiled from reports to ARI from manufacturers whose output is estimated to represent in excess of 90% of the industry.

Actual shipments in July totaled 368,126 units, compared with 221,411 units in July of 1955. Shipments for the first seven months of 1956 totaled 3,175,008 units, against 2,339,302 in the same period of last

(Concluded on Page 6, Col. 1)

NEW ORLEANS — More performance ratings on air conditioning and refrigeration equipment and components, and more action to make such ratings "meaningful" will be forthcoming in the near future, George S. Jones, Jr., managing director of the Air-Conditioning & Refrigeration Institute, told members of the Air Conditioning & Refrigeration Wholesalers Association at the group's annual convention here.

The increased activity in this area of association activity will embrace not only testing and rating standards on end-use equipment, such as packaged air conditioners of various types, but also component parts.

Some of the ARI Product Sections for component parts which

(Concluded on Page 7, Col. 3)

## NWAHACA To Offer 'Dealer-Centered' Program Nov. 28

CLEVELAND — A "dealer-centered" program is promised by the National Warm Air Heating and Air Conditioning Association for its 43rd annual convention scheduled for Wednesday and Thursday, Nov. 28 and 29, at the Netherlands Plaza hotel in Cincinnati.

Though the association is comprised of manufacturers, wholesalers, and dealers, the emphasis will be on providing dealer-contractors with the type of information they will need to plan for the future, according to G. W. Denges, president of the association.

First session Wednesday morning will be devoted to the prospects for the residential market. The Wednesday afternoon session will explore ways to sell to consumers.

How the certified heating program works and the costs of

(Concluded on Page 8, Col. 4)

## Dairymen View New Freezers, Vendors, Truck Units; Find 'Bulk Tank Era' Here

By George M. Hanning

ATLANTIC CITY, N. J. — A multitude of refrigeration equipment and a few air conditioning "gimmicks" greeted dairymen attending the 20th Dairy Industries Exposition here.

High interest was shown in such items as continuous ice cream freezers, refrigerated

A number of new products which were exhibited at the 20th Dairy Industries Exposition are pictured on pages 28 and 29 of this issue.

trucks with plastic and aluminum bodies, and a variety of milk vending machines.

There was nothing startlingly new in the refrigeration line though a number of improve-

(Concluded on Page 4, Col. 3)

ATLANTIC CITY, N. J. — Last May there were an estimated 54,000 bulk milk tank coolers in use on U. S. dairy farms and by next May the total will reach 100,000 units, predicted Dr. E. L. Thomas, associate professor of dairy industry at the University of Minnesota.

"Thus we can no longer speak of the 'bulk tank era' as a future development," Dr. Thomas told the Milk Industry Foundation at its convention here. "Many mass conversions to bulk handling have already taken place and mechanization of milk handling is a reality."

"The bulk cooling tank has provided the producer with an

(Concluded on Page 4, Col. 1)

## Death Trap Violator Must Pay Burial Costs, Sponsor Safety Contest

THOMASVILLE, N. C. — A landlord must pay for the funeral of a child who died in an abandoned ice box here, erect a monument at her grave, and set up a \$500 safety essay contest fund—or spend six months in jail.

Judge L. Roy Hughes imposed this penalty on Jack Everhart, 56, convicted by a jury under a new state law that forbids anyone to have abandoned ice box "death traps" on their property unless doors have been removed.



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## Air Conditioning To Highlight RSES 3-Day Kansas City Meeting Nov. 15-17

CHICAGO—The 19th annual convention of the Refrigeration Service Engineers Society will get under way on Thursday, Nov. 15, at the Muehlebach hotel in Kansas City, Mo.

A series of 13 talks are scheduled for the four-day convention and third International RSES educational forum. Emphasis at the forum will be placed on air conditioning, with six of the talks touching on various aspects of the subject.

Other talks will cover water treatment, drying refrigerants, behavior of oil in refrigerating systems, safety, changing sealed unit components, service instruments, and truck refrigeration. "Information Please" sessions will start off proceedings on

Friday and Sunday mornings.

Social highlights will include a "Western Jamboree" Thursday evening and a banquet and entertainment Saturday evening. A gadget contest will offer prizes of \$50, \$25, \$15, and \$10 for the best gadget ideas displayed.

## Court Restricts Union Picketing at Weber; Firm Asks Injunction

LOS ANGELES — A court order restricting union picketing activities at its two plants here was obtained recently by Weber Showcase & Fixture Co., which was struck by some 350 employees last Oct. 19.

Signed by Superior Judge John J. Ford, pending a hearing set for Nov. 9, the order was issued shortly after the company filed a suit for injunction and damages against United Automobile, Aircraft and Agricultural Implement Workers of America, Local 811. The suit also included as defendant the parent international, an AFL-CIO affiliate.

According to the complaint, the 350 employees represented by the unions out of a total of 1,100 employees went on strike after negotiations for a contract had failed.

The company also demanded \$150,000 damages for past alleged interference with its operation plus \$20,000 a day so long as it continues, and like amounts as punitive damages.

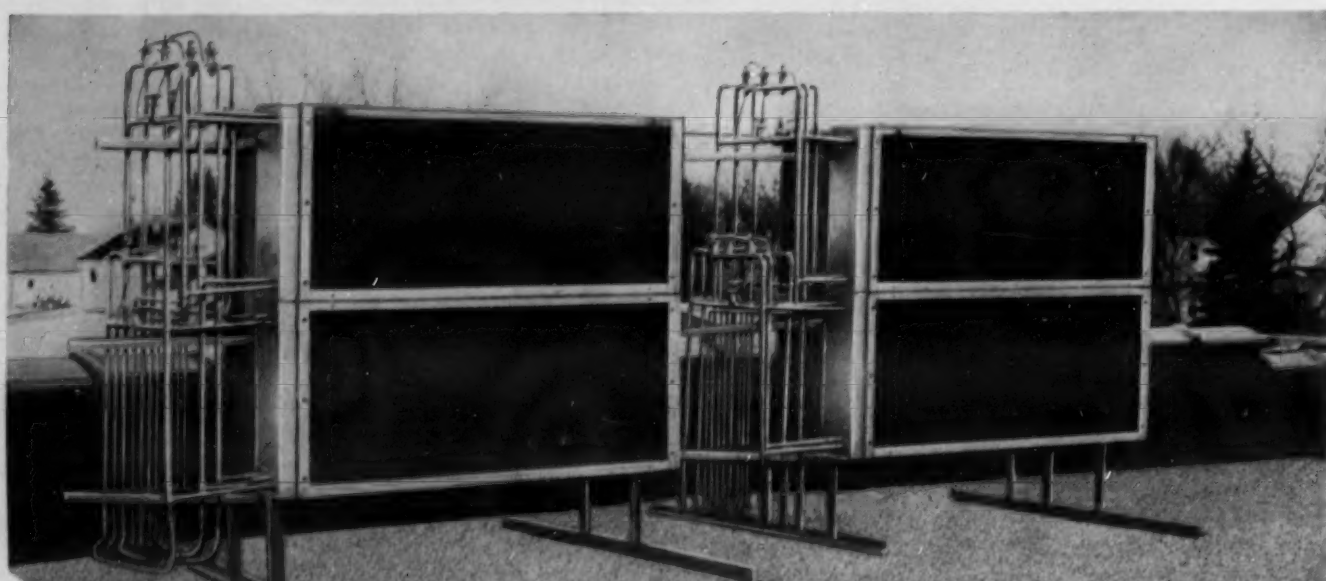
## UL Approves Entire Marco Small-Hp. Line; New Motor Designed

WOMELSDORF, Pa. — Marco Industries, Inc., producer of fractional horsepower motors for the air moving equipment industry, claims it is the first manufacturer to receive the underwriters "yellow card" approval for its entire line of motors.

Approval by the Underwriters' Laboratories of its new shaded pole motor, designed specifically to meet 1957 air conditioning equipment design requirements, concludes the UL tests for all current Marco motor types, Marco officials state.

"This enables equipment manufacturers to reduce by almost two weeks the time required for UL approval of equipment using custom-designed Marco motors," company officials stated.

G. Russell Eddy, Marco executive vice president, also stated that production would be speeded up because "Marco suppliers now stockpile all essential raw materials in warehouses close by our factory. When an order is received, we can get into immediate production. In many cases, deliveries begin within two or three days to meet the manufacturer's assembly line schedule even though that customer might request design changes."



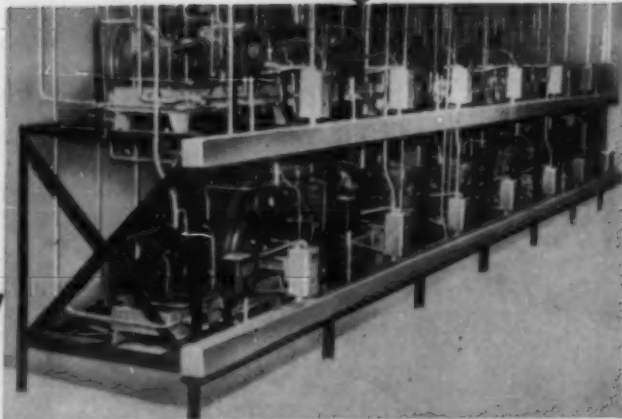
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Winter and Summer  
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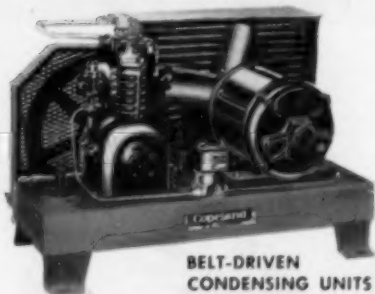
Copeland's new 270,000 sq. ft. plant on a 75-acre tract in Sidney, Ohio, opens a new era for Copeland, its dealers and wholesalers. Enlarged and modernized facilities will provide more efficient service for our customers.



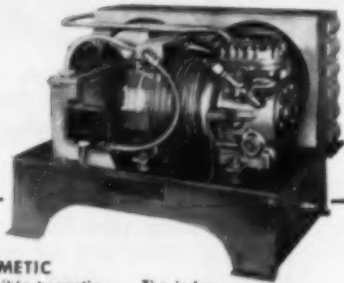
## with *Copeland*



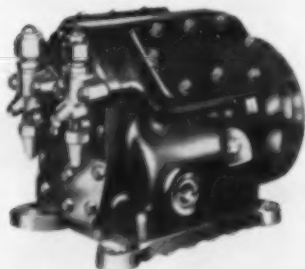
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Heavy-duty performance at low current consumption.



**BELT-DRIVEN CONDENSING UNITS . . .**  
Superior - engineered for every refrigeration need.



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**AUTOMOTIVE AND TRUCK COMPRESSORS . . .**  
Designed for the critical needs of truck and auto air conditioning and refrigeration.

Copeland's 38-year history is one of constant growth.

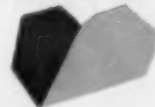
Our handsome new plant is only another step in a progressive tradition begun years ago. The bright

future for air conditioning and refrigeration is opening up now . . . and the entire Copeland

family—company, dealers and wholesalers—is ready with new facilities, new models and a new

distribution policy geared to provide the kind of service that assures profitable business for all.

WRITE FOR DEALER INFORMATION



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REFRIGERATION

CORPORATION, Sidney, Ohio

*manufacturer of the heart of America's finest air conditioning and commercial refrigeration*



## Bulk Milk Tank Era Here--

(Concluded from Page 1, Col. 4) effective means of rapidly cooling milk to 40° F. or lower and maintaining this temperature during holding," Dr. Thomas continued.

"The rate of bacterial growth is exceedingly low at these temperatures. Research and practical experience has demonstrated that the increase in bacterial count is practically nil even under conditions of every-other-day pickup, provided that the temperature of the milk is maintained at 40° F. or lower.

"Off flavors due to bacterial growth in raw milk supplies should be practically non-existent where bulk handling is employed. The occurrence of such a flavor in milk from a bulk cooling tank indicates either inefficient refrigeration or total lack of refrigeration.

"In two cases of high acid pickup of milk from tanks

milk recently called to our attention, one case involved mechanical failure of the refrigerating mechanism. In the other, it was due to failure of the operator to turn on the compressor which was controlled by a manual switch.

"In this instance, the bacterial count increased to 39 million by the time of pickup, whereas normally the count was consistently under 10 million.

"The possibility of such occurrences can be effectively minimized by

"1. Insisting that tanks be equipped with foolproof automatic refrigeration controls,

"2. Providing for adequate and prompt servicing when needed, including periodic checks on operating efficiency, and

"3. Providing for emergency

which may be temporarily without refrigeration due to power failure or other known causes.

"It should be emphasized that bulk cooling tanks and pipeline milking systems are no guarantee of higher quality milk.

"However, if properly installed and operated, they do make the job much easier. The results will still largely depend on the individual who actually performs the various milk handling operations."

Referring to the problem of rancid milk, Dr. Thomas asserted that "it has been fairly well established that under normal operating conditions, the agitation and temperature fluctuations to which milk is subjected in bulk cooling tanks have not been responsible for the increased difficulty with rancidity.

"Cooling in the bulk tank normally takes place at a sufficiently rapid rate so that the milk temperature never reaches critical levels at which activation of lipase activity (enzymes that cause rancid flavor), or lipolysis, is apt to occur.

"However, if any activation has occurred before the milk enters the tank, lipolysis may continue even after the milk has been cooled to 40° F. or lower," Dr. Thomas concluded.

## Dairy Show--

(Concluded from Page 1, Col. 3) ments or variations on previously developed equipment were exhibited.

Among the more unusual items were a small display case for merchandising ice cream novelties in theater lobbies shown by Bally Case & Cooler Co., a vending machine that will vend four sizes of containers at one time by Dariomatic, Inc., a milk tank truck with three forced air cooled compartments at the back to keep milk hose and samples under positive refrigeration by Walker Stainless Equipment Co., and a truck refrigeration system that will maintain normal and low temperature compartments on a single unit by Kold-Hold Div. of Tranter Mfg., Inc.

General Equipment Mfg. Co., Inc. demonstrated its "Sani-Air" accessory that uses the refrigeration system on its "Sani-Serv" ice cream freezer to provide air conditioning when the freezer is on the off-cycle. King Zeero Co. used its ice builder as the basis for an air conditioner that has an oscillating hood that distributes cooled air to all corners of a room as an oscillating fan would.

Several milk dispenser manufacturers seem to think enough of the potentialities of the home market to show small bulk milk dispensers holding two 3-gal. cans. One, Food Engineering Corp., has developed a unit that will dispense three flavors of milk, adding syrup to the cup as the milk flows in.

Cherry-Burrell Corp. bowed an ice cream freezer that will produce three flavors at one time. Creamery Package Mfg. Co. displayed an ice cream freezer with a new refrigeration system that will produce 600 gals. per hour.

Sidney Siegel, assistant sales manager for Fogel Refrigerator Co., commented that the recent seven-alarm fire that destroyed

two buildings at the company's Philadelphia plant had also destroyed the seven and only models of its new automatic defrosting, counter top, angle vision ice cream merchandiser.

The one unit displayed at the Dairy Show was hand-assembled from bits and pieces of those seven units, he said.

Refrigeration problems cropped up at two conventions during the exposition. The Milk Industries Foundation conducted panel discussions on truck refrigeration and on farm bulk tanks, while the International Association of Ice Cream Manufacturers heard about some developments in the operation of ice cream freezers.

## Brunner To Unveil '57 Production, Sales Plans

UTICA, N. Y.—The 1957 production and marketing plans of Brunner Mfg. Co. here and its subsidiary, The Brunner Co. of Gainesville, Ga., will be unveiled at a three-day annual sales conference to be held in Gainesville Nov. 26-28, according to Wallace J. Hoeing, Brunner sales manager.

The program will include a detailed and guided tour of the new Brunner plant facilities. Field men will receive an intensive demonstration of the 1957 "Brunner-Metic" line of semi-hermetic equipment.

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**MIGHTY MITE** Thermal Protectors can be furnished as small as 1 1/8" long x 3/8" wide for motors rated up to 1/4 H.P., 115/230 v.a.c. They are factory set at accurate break temperatures to 150° C. **MIGHTY MITES** are packed in well-marked, "ready-to-use" packages. No re-setting, sorting or other handling is required. These compact, dependable protectors are furnished with any type lead wires or terminals, and will probably fit into your present stator without requiring re-design or change of assembly procedure. If you buy motors, specify **MIGHTY MITE** thermal protectors.

### FOR APPLIANCES . . . DUAL MITE



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**DUAL MITES** are an ideal, automatic thermal control for appliances where a fixed, accurate heat regulation is required up to 150° C. They can be installed readily without product modification. **DUAL MITES** are furnished in ratings to 12 amps, 115/230 v.a.c., and are housed in an insulated case for maximum thermal sensitivity.

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Doctor Developing Data

## Frozen Food Industry Formulating Model Code

SAN FRANCISCO—Dr. Gail Dack, professor of bacteriology at the University of Chicago, has been retained by the national frozen food industry to undertake development of reliable data needed in the formulation of a model code which would set legal standards of bacterial content and holding tem-

peratures for frozen foods. This was announced recently by Milton Duffy, chairman of the Committee on Canned, Frozen, and Processed Foods of the Association of Food & Drug Officials.

Duffy's committee, by resolution adopted by the association in New York last July, was

authorized to develop a model code in cooperation with other experts in this field, in industry, and in the sciences.

The code would be offered to the various states for legislative enactment. Pre-cooked foods are a particular concern of the present inquiry.

Dr. Dack's appointment was

hailed at the Western Utilization Research Branch of the U. S. Dept. of Agriculture, which is now engaged in studies on time-temperature tolerances of frozen foods.

It was pointed out that Dr. Dack is a national authority on food technology and the bacteriology of foods. He has worked closely with the American Meat Foundation and meat packers to get safe standards.

One of his big projects right now is on staphylococcus

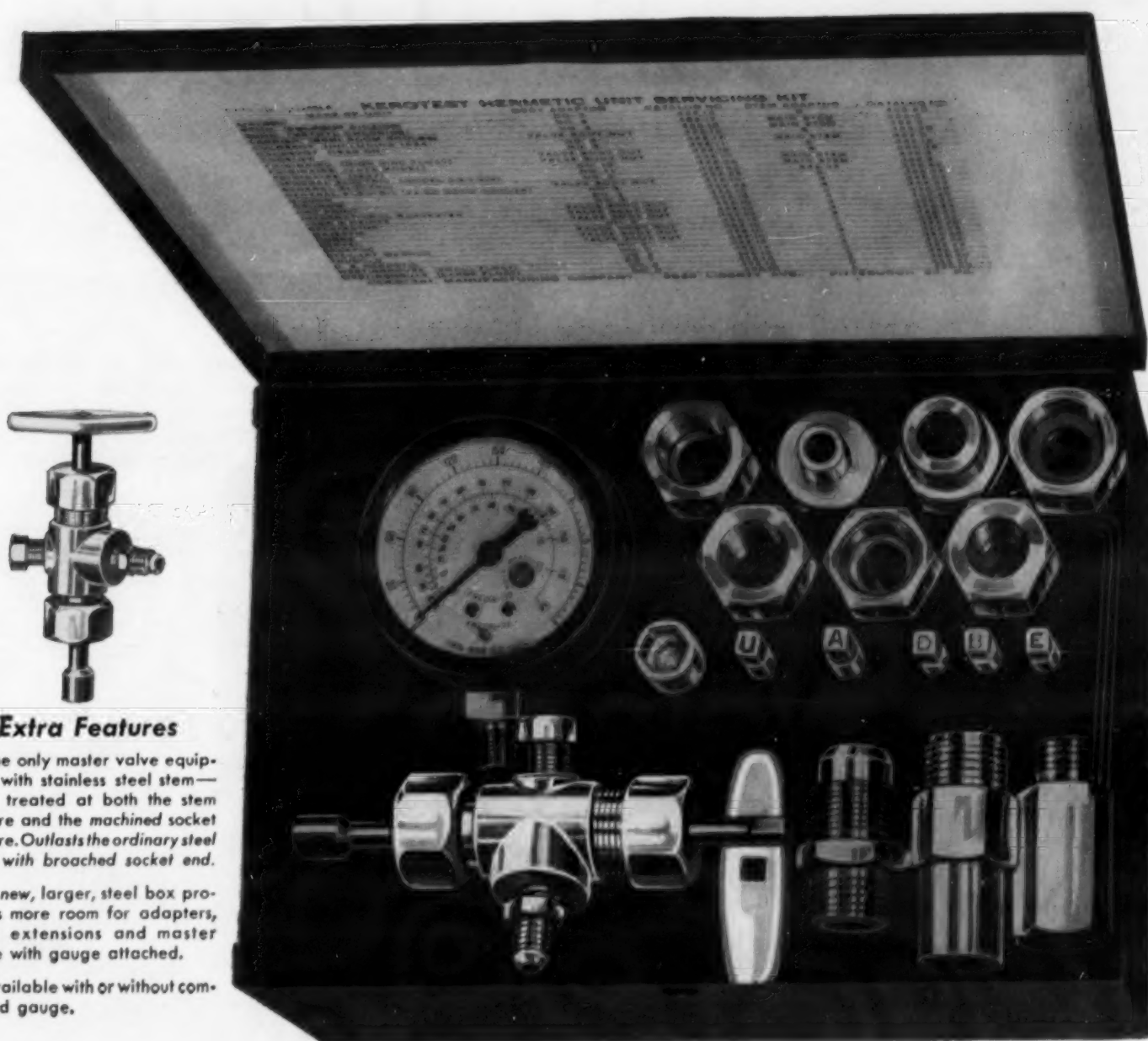
poisoning from foods. This project has been supported by the food processing industry for several years past.

Dr. Dack has been able to isolate the staph toxin. Isolation of this poison makes it possible to develop an anti-toxin which may be used to kill staph or the effects of it.

Staph is the common bacteria found in the air nearly everywhere, and is an organism the human body does not seem to develop resistance against.

# NEW!

## KEROTEST HERMETIC SERVICE KIT



### Extra Features

- ★ The only master valve equipped with stainless steel stem—heat treated at both the stem square and the machined socket square. Outlasts the ordinary steel stem with broached socket end.
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- ★ Available with or without compound gauge.

The new Kerotest Hermetic Service Kit offers added features at no extra cost to the service engineer. All stem extensions, adapters and master valve are plated, thus adding to the life of the kit. Eliminates the need for a separate valve for each hermetic unit requiring

service. These are just a few of the many time and cost saving features found in this new kit. Get your Hermetic Service Kit from your Kerotest wholesaler—today.

With gauge Cat. No. 4321G.  
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## Compressors --

(Concluded from Page 1)

year, for a gain of 36%. These totals do not include compressors designed for use with ammonia refrigerants.

Of the seven-month total for this year, 194,056 of the compressor bodies shipped were of the type used in automotive air conditioning—26,569 of them in July.

Comparative figures for 1955 are not available, but total 1955 shipments of compressor bodies for automotive use amounted to 255,371 units.

Figures for compressor bodies, broken down by categories, together with names of reporting companies, follows:

## MANUFACTURERS' SHIPMENTS OF COMPRESSOR BODIES PRODUCED BY REPORTING COMPANIES

(Except for household refrigerators)

	Shipments Including Exports	Exports
Horsepower*	July, 1956	Jan.-July, 1956
1/2 & under ...	59,457	353,783
1/2 ...	66,726	530,115
3/4 ...	30,648	212,289
1 ...	43,756	309,123
1 1/4 ...	45,512	573,988
1 1/2 ...	32,037	515,326
2 ...	28,981	229,062
3 ...	8,295	55,344
4 ...	10,120	87,163
5 ...	9,520	67,740
7 1/2 ...	8,905	30,833
10 ...	1,040	6,589
15 ...	388	2,505
20 ...	295	1,864
25 ...	238	1,261
30 & over ...	689	4,407
<b>Total</b> .....	<b>341,557</b>	<b>2,980,552</b>
For Ammonia Refrigerant—		
Total .....	148	1,221
For Automotive Air Conditioning—Total	26,569	194,056
<b>Grand Total</b> .....	<b>368,274</b>	<b>3,176,229</b>

\*For all refrigerants except ammonia (excluding units for automotive air conditioning).

Reporting companies: Airtemp Div., Chrysler Corp.; Brunner Mfg. Co.; Carrier Corp.; Copeland Refrigeration Corp.; Curtis Mfg. Co.; Refrigeration Div.; Frick Co., Inc.; Frigidaire Div.; General Motors Corp.; General Electric Co.; Kelvinator Div., American Motors Corp.; Lehigh, Inc.; Servel, Inc.; Tecumseh Products Co.; Trane Co.; Vilter Mfg. Co.; Westinghouse Electric Corp.; Worthington Corp.; York Corp.

This summary includes all compressor bodies shipped by the reporting companies regardless of whether they were shipped separately or incorporated into a condensing unit or unitary end-use product (such as a room air conditioner, display case, freezer, or commercial refrigerator). Shipments for export are included. Shipments for household refrigerators are not included.

In order to avoid duplication of reporting, shipment figures were requested only from companies that assembled the machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.

## Instrument Laboratory Fully Air Conditioned

HOUSTON, Texas — Houston Technical Laboratories, instrumentation subsidiary of Texas Instruments, Inc. recently dedicated its new completely air conditioned plant for development and manufacture of a wide range of geophysical and industrial instruments.

The firm produces equipment used in worldwide geophysical exploration for petroleum. Air conditioning aids in highly precise manufacturing operations.

This new main plant has 40,000 sq. ft. of space for offices, laboratories, and manufacturing.

## Church Conditioned

DALLAS — Lakeview Christian church has begun construction of a new \$100,000, two-story educational unit which will be completely air conditioned.

## Air Moving Group Adopts Standards

DETROIT — Adoption of standards and test codes for air moving and conditioning equipment has been announced by the Air Moving & Conditioning Association.

At its annual meeting, the association approved standards which cover centrifugal, axial, and propeller fans; steam and hot water unit heaters; dehumidifying air washers; central station air conditioning units; power roof ventilators; and residential (attic, window, etc.) type fans.

Included in the standards are terms, definitions, operating limits, standard sizes, installation recommendations, specifications, etc.

"In so far as possible, the new standards conform with standards and codes previously published and accepted by industry," it was pointed out.

"For example, the standard test code for centrifugal and axial

fans adopted by the association is identical with that sponsored by the American Society of Heating & Air-Conditioning Engineers, and the national Association of Fan Manufacturers.

"It includes data on definitions, testing instruments, determinations, observations and calculations, symbols and formulas, descriptions of various test setups, etc.

"Similar information is included in other test codes adopted for equipment such as steam and hot water unit heaters; and forced circulation of air cooling and air heating coils.

"Much additional information for testing prototypes of extremely large size fans by means of scale models has been added to the standards."

This method, says Robert W. Nelson, AMCA president, "has the advantage of eliminating the need for building full scale models of large equipment which can be expensive and impractical."

The association was formed early this year.

# Now! Go Trane all complete line of



TRANE Self-Contained Air Conditioner, as shown in SATURDAY EVENING POST advertisement.



They're trim! They're slim! They're quiet! And they're packed with features that help you sell!

The compact 3 through 15-ton deluxe models pack maximum cooling comfort into a sleek, modern cabinet. Easy to install in store, shop or office; no interruption of your customer's business. Exclusive "iso-sound" design has fan section and compressor section floating independently on sound and vibration isolators for whisper-quiet operation!

Easy-to-install 10-15-20-ton commercial sizes for your larger jobs—these big capacity packaged air conditioners will help you get those profitable larger commercial and industrial jobs. Can be installed outside the conditioned space, for use with ductwork. Available with or without built-in water saver.



## Pharmacy Sales, Clerks Pepped Up When Air Conditioning Returns

ANTIOCH, Calif.—"Climate" on store workers was also noted. "Difference in morale on influences sales, reports owner William Heathorn.

When the air conditioning equipment was temporarily out-of-order recently, he found customers in more of a hurry to leave the store, less ready to buy items other than what had brought them in, Heathorn said. A serious slackening of effort

Heathorn declared. Since the equipment also heats in the colder season, the temperature of the store is maintained at a comfortable level throughout the year. "We know it has increased our sales because people stay longer."

## ARI Product Testing and Rating--

(Concluded from Page 1)

met recently in New Orleans are said to be well along with standards for testing and rating their products.

"In the very near future you and your customers will be able to place complete dependence on the ratings of products which have been issued by manufacturers who are members of the ARI, under standards developed by the ARI," Jones told the ARW members.

In an interview after his talk, Jones outlined two possible ways in which the ratings issued by individual manufacturers, whether or not members of ARI, would be made "meaningful" and given validity:

### WAYS IN WHICH MFRS. MIGHT CERTIFY RATINGS

(1) Through a process of self-certification, whereby the manufacturer would make a

pact with ARI and certify their ratings.

(A) Through proper test facilities set up on their own premises, or

(B) By contract with a recognized industrial testing laboratory.

(2) A "pre-certification" program, in which the manufacturer would submit each new model in his line to a central testing agency for testing and rating before placing it on the market. This would be somewhat similar to the American Gas Association program whereby gas-operated equipment is tested and given the A.G.A. seal of approval.

If the second-named program were generally adopted, the testing might be done either by a private laboratory, or possibly by a laboratory which ARI might establish, if the membership so desired.

### CONCILIATION MAY BE USED ON PROTESTED RATINGS

Thus far, no exact method of "policing" the ratings has been established. However, there seems to be a general agreement among the ARI members participating in the ratings program that if some ratings were to be protested, the first move would be to get together the companies involved in an attempt to discuss and "talk out" the situation.

If such conciliation measures should fail, then possibly a special ARI committee might test the particular model around which the controversy revolved, and the results of this test would then have to be accepted, or the company that made the initial rating could not use the ARI certification.

There would be a final legal recourse through the Federal Trade Commission, within the scope of its activities covering false and misleading advertising, but it would seem doubtful that any specific case might be carried that far.

The ARI headquarters has requested manufacturers to forward their B.t.u. ratings on room air conditioners just as soon as possible so that they might be published as quickly as possible. However, it is not believed that ARI will publish these individually, but will make them available when they are all in, and that may not be until early in 1957.

The association is requesting that manufacturers include the ratings in specifications sheets furnished to dealers, and would also like to see them included in advertising and promotion directed to consumers.

# the way with a packaged units

*Self-Contained units from 3 to 20 tons make TRANE  
the most complete air conditioning line in the industry!*

Your customers will like these trim, slim packaged air conditioning units—and you'll like doing business with TRANE! You'll have the finest line of air conditioning equipment in the industry—with no problems of line limitation, order quotas or warehousing.

TRANE packaged units are competitively priced, with a 5-year TRANE Warranty—and, best of all, they're backed by the complete TRANE line that puts you in the air conditioning business *all the way*. You'll have a complete line of equipment to handle any size—any type—of air conditioning job!

Ask your TRANE Sales Representative now about all the extra advantages you'll have as a TRANE Authorized Dealer—or write TRANE, La Crosse, Wisconsin.

*Here's why it makes sense for you to turn to TRANE*

- **Most complete line** of equipment in the industry! Competitively priced equipment for any type air conditioning job.
- **A nationally recognized name**—TRANE is well known for outstanding equipment . . . the famous TRANE CenTraVac, TRANE UniTrane units, TRANE Compressors and many more.
- **A truly national service organization**—fully trained and equipped, available to help you . . . not a "phantom" service force!
- **Complete business freedom!** TRANE Authorized Dealers have complete freedom of action in buying and selling. No problems of quotas or minimum orders when you deal with TRANE!
- **Nationwide sales force**—A network of Sales Offices in 90 cities working with architects and engineers to obtain favorable specifications and over-all company acceptance.

### • PLUS selling aids like these:



National consumer advertising in SATURDAY EVENING POST, U. S. NEWS, FORTUNE, BUSINESS WEEK and other leading magazines—plus liberal co-operative advertising program (optional)—plus FREE newspaper advertising mats for local use.



Colorful sales literature, booklets, proposal covers, window decals and signs for your place of business—or for use at installation sites. You get everything you need to help you sell, install and service the finest air conditioning equipment when you go TRANE!

*For heating, cooling, ventilating . . .  
for any air condition, turn to*

# TRANE

MANUFACTURING ENGINEERS

The Trane Company, La Crosse, Wis. • Eastern Mfg. Div.,  
Scranton, Pa. • Trane Company of Canada, Ltd., Toronto  
90 U.S. and 19 Canadian Offices

WANT MORE FACTS on your profit possibilities with the complete TRANE line? Just call your nearby TRANE Sales Office—or send the coupon to TRANE.

Please attach to your letterhead

The TRANE Company, La Crosse, Wisconsin

Please send me complete information on the new TRANE Self-Contained Air Conditioners—plus information on what a TRANE Authorized Dealership means to me.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

## Temperature, Humidity Control In Cooling Room Maintain Egg Quality

ZANESVILLE, Ohio — The Southeast Ohio Egg Producers recently announced completion of new air conditioned facilities south of Somerset on Rte. 13.

A combination of temperature control at 55-58° in the egg cooling room with humidity maintained at relative 80-85% is reported to give maximum results in maintaining egg quality from the time the eggs are brought into the plant until they are delivered to the city.



## AAF Self-Contained 'Stop-and-Shop' Filter Display Carton Offered

LOUISVILLE, Ky. — A completely self-contained display for "AMER-glas" furnace filters that doubles as a shipping carton, recently was introduced by American Air Filter Co., Inc.

The new self-service display called the "Profit Pak," occupies only 20 in. of floor space yet contains 26 white AMER-glas filters in eight of the fastest moving sizes. The Profit Pak supply of filters is stocked to accommodate the needs of 85% of all calls for furnace filters, it was noted.

Made of durable corrugated kraft, one complete end of the carton zips open with a simple tear-tab like a package of cigarettes, exposing the entire supply of 26 filters. It can be dis-



SELF-CONTAINED "AMER-glas" furnace filter display doubles as shipping carton.

played either on the floor or counter and comes equipped with a customer-catching display card for the top of the unit, the firm said.

In introducing the new display

to wholesalers, F. Robert Walker, manager of AMER-glas products, said: "This is the first complete dealer merchandising package for profitable 'stop-and-shop' selling of furnace filters to be introduced."

## Steinen Ups Hundley to Products Divs. Chief

NEWARK, N. J. — Wm. Steinen Mfg. Co., maker of oil heating accessories and other items, recently announced the promotion of Robert W. Hundley to general manager of all product divisions of the firm.

Hundley will supervise and coordinate over-all sales policy and product planning.

Chris Jensen, Jr., veteran of 21 years in the oil heat industry, also was appointed sales manager, Heating Products Div.

He will coordinate sales, both national and international, in the Heating Products Div.

## NWAHACA 'Dealer-Centered' Program --

(Concluded from Page 1)

doing business will be aired Thursday morning. Latest research results in heating and air conditioning will be disclosed on Thursday afternoon.

A special feature that has not yet been spotted in the program will be a preliminary report on consumer reaction to central air conditioning as surveyed by the du Pont Co. Ralph A. Crane, manager of market research for du Pont will make the report.

Entertainment feature of the convention will be an evening at the Beverly Hills Country Club just outside Covington, Ky. on Wednesday. It will include dinner, entertainment, and dancing.

The convention program is as follows:

WEDNESDAY, NOV. 28

8:30 a.m.—Registration.

9:45 a.m.—"Association's Progress During 1956"—G. W. Denges, president, NWAHACA. "American Economy and the Home Building Picture"—Dean Arthur M. Weimer, Indiana university.

"How to Sell to the Builder"—Speaker to be announced.

"Operation Home Improvement During 1957"—John R. Doscher, executive director, Operation Home Improvement.

"Warm Air Heating and Air Conditioning Modernization for 1957"—Randall A. Nelson, director of public relations, NWAHACA.

Nomination and election of officers and board of trustees.

12:30 p.m.—Luncheon: "Humidity Benefits in Many Ways"—Everett R. Phelps, professor of physics and astronomy, Wayne State university.

2:30 p.m.—"Why Do People Buy?"—Irving Gilman, director of special projects, Institute of Motivational Research.

"Why Do People Buy Air Conditioning?"—Speaker to be announced.

"Selling to the Public"—Robert D. Strickler, director of sales, Lennox Industries, Inc.

"Be Ready to Sell"—Lorin G. Miller, dean emeritus, Michigan State university.

Evening—An evening at Beverly Hills.

THURSDAY, NOV. 29

9:30 a.m. — "Know Your Costs"—W. L. Dulle, executive vice president, E. E. Souther Iron Co.

"Certified Heating System"—D. M. W. Wilson, managing director, NWAHACA of Canada.

"What's Happening in Cleveland, Charlotte, and Pittsburgh"—Ray Quiggin, H. Quiggin and Son, Cleveland; James B. Kuykendall, Jr., E. P. Nisbet Co., Charlotte, N. C.; D. E. Hickey, D. E. Hickey Co., Pittsburgh. Moderator: H. F. Brundage, president, The Brundage Co.

12:30 p.m.—Luncheon: "Skulduggery at the Old Crossroads"—Art Briese.

2 p.m.—"Report of University of Illinois Research Activities"—F. L. Meyer, chairman, research advisory committee.

"Consumers' Experiences in Living with Air Conditioning"—C. W. Nessell, chairman, field investigation committee.

"Panel Discussion of Research Results"—D. R. Bahnfleth, special research assistant in mechanical engineering, University of Illinois; J. R. Wright, research staff committee, University of Illinois; M. V. R. Rao, research staff committee, University of Illinois.

All sessions will be held in the Hall of Mirrors. Luncheons are scheduled for the Pavilion Caprice.

# KEEP IT QUIET.

Just between us — there's a secret in Utility's new Direct Drive Blower that gives you practically no-sound operation. These blowers are now equipped with neoprene hubs which isolate motor noise and vibration. A simple technique developed by Utility's fine engineering minds — it is included in all direct drive blowers at no advance in cost. The first to utilize this exceptional innovation, Utility is a leader in the kind of high speed production which permits quality performance at a quantity price.

Let your customers in on it — Utility's Direct Drive Blowers keep it quiet and offer many other exclusive features. They are adaptable to the manufacture of heating, cooling, refrigerating and ventilating equipment... require less space, have no unnecessary accessories and can be speed-controlled easily. Check Utility for blowers, blower parts or any combination of parts — and discover for yourself...

YOU CAN'T MATCH UTILITY FOR PRODUCT AND PRICE

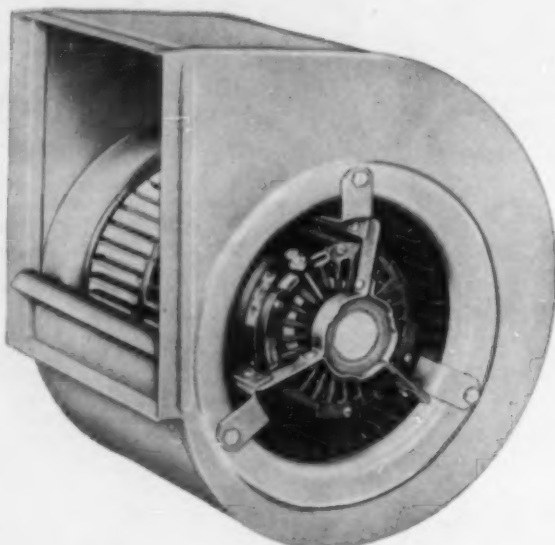
A Division of Utility Appliance Corp.

UTILITY FAN CORPORATION

911 East 59 Street, Los Angeles 1, California



Producers of blowers and blower parts for original equipment manufacturers. Manufacturers of heavy and standard duty blowers for heating, air conditioning and ventilating installations. Write for catalogue data.



## MINERALLAC HEAVY DUTY & MEDIUM JIFFY CLIPS



Made of heavier materials! Has exclusive inverted rib, that provides more strength at the bend of clip... and, of course, adds the benefits of famous "Snap On" feature! Send for literature.

MINERALLAC ELECTRIC COMPANY  
25 N. PEORIA ST. • CHICAGO 7, ILL.



## Colombia To Make Own Refrigerators for Home, Industry in New Plant

BOGOTA, Colombia—A new 75,000-sq. ft. manufacturing plant now under construction in Bogota will free Colombia from its dependence upon foreign sources for domestic and industrial refrigerators, it was reported here.

Financed by a loan from the Export-Import Bank of Washington, Industria Colombiana De Artefactos, S.A., (ICASA) expects production of kerosene and electric refrigerators to get under way before January, 1957. The new plant is designed for an annual production of 100,000 units.

Kerosene refrigerators will be manufactured under patents issued by Servel, Inc. and will be sold under the Servel name. Electric refrigerators will be marketed under ICASA's own brand name. Electric washing machines and other household appliances are planned for the near future.

ICASA will become the first Colombian firm to manufacture, not assemble, household appliances. A shortage of U.S. dollars has made it necessary for the country to restrict the official exchange rate to essential imports; heavy machinery, and so forth.

Consumer goods, such as refrigerators, can be brought into the country only at the free, higher, exchange rate. It is expected that domestic manufacture will not only substantially reduce the price of refrigerators in Colombia, but will reserve dollars for needed imports of capital goods.

The planning and design of buildings and machinery has been under the supervision of American, Mexican, and Argentine engineers.

## Norge Appoints Edna Towery Southeastern Home Economist

CHICAGO — Appointment of Miss Edna Towery as southeastern home economist was announced recently by Mrs. Jessie Cartwright, home service director, Norge Div., Borg-Warner Corp.

She will assist distributor home economists in activating programs with dealers on Norge home appliances in the following 11 cities: Birmingham, Ala.; Jacksonville, Fla.; Atlanta; Charlotte, Greensboro, and Raleigh, N. C.; Charleston, S. C.; Johnson City, Chattanooga, Knoxville, and in Nashville, Tenn.

Miss Towery formerly worked as a home economist in the All Div. of the Monsanto Chemical Co. for several years, it was added.

## Distributor Official Wounded by Thug

PHILADELPHIA — Jack S. Rosen, vice president in charge of sales for Raymond Rosen & Co., RCA-Victor distributor here, was shot in the side and seriously wounded by a thug recently.

The hold-up man fired when Rosen shoved him. Rosen was taken to Lankenau hospital where an emergency operation was performed.

He was reported in fair condition.

## Frigidaire 'Showmobile' To Feature Actual 'Dream' Kitchen, Year-Round Air Conditioning

DAYTON—As part of Frigidaire Div., General Motor Corp.'s merchandising program for 1957, the company will send a 30-ft. "dream" kitchen on a nationwide tour of major cities, it was recently announced.

The traveling exhibit will be used for sales to builders and on-the-spot dealer franchising, according to W. F. Switzer, sales merchandising manager.

Frigidaire's "home on wheels"

features an actual kitchen and utility room fully equipped with the firm's 1957 appliance year-round heating and air conditioning lines.

On tour, the "showmobile" will be available for display by builders, contractors, and other users of Frigidaire products. The exhibit shows how Frigidaire's new appliance styling concepts give nearly any kitchen a built-in look without extensive

alterations, Switzer further pointed out.

Plans are also under way, he disclosed, to place the exhibit at leading builder, home, and appliance shows, and to make it available for possible dealer tie-ins.

## Carrier Names Outlet

SHREVEPORT, La. — Air-Conditioning Distributors, Inc. here has been appointed franchised distributor for the complete line of Carrier air conditioning and heating products, it was announced. W. M. Hungerford is president of the firm.



**Every 3 seconds...**

**another Ranco control**

**goes into service**



Ranco constant cut-in control, A12-1504, for beverage coolers

- Offers constant cut-in (factory setting) and dial adjustment of the cut-in setting.
- Manual Off position on dial knob.
- Screw type terminals.
- 115, 125 or 135 volts AC.

Twenty-four hours a day, 365 days a year... new precision-built Ranco Controls are installed in refrigeration, air conditioning and appliance applications at the rate of one every 3 seconds.

And there are sound reasons for selecting Ranco Controls, too:

Ranco Controls perform efficiently. More than 85 million Ranco installations have already proven the efficiency of Ranco Controls in actual use, your assurance of customer satisfaction.

The right control for your application. Ranco offers a much larger line of exact replacements and easily adaptable controls, than any other manufacturer. This simplifies your service job, cuts your service time.

Prompt factory service on special controls. Your Ranco Wholesaler stocks the most commonly used Ranco Controls. And he'll order "specials" for you direct from the factory.

Better controls, bigger line, faster service—that's why most servicemen insist on Ranco Controls. That's why you should, too.

### PARTS ORDERS for

## UNIVERSAL

- AIR CONDITIONERS
- REFRIGERATORS • FREEZERS and
- BEVERAGE COOLERS

Including Alsco; Ambassador; Armad; Artkraft; Coolaire; Majestic; Philharmonic; Supremacy; U. S. Capitoaire.

Should now be sent to:

UNIVERSAL DIVISION  
THE HORTON COMPANY  
915 Liberty Ave., Pittsburgh 22, Pa.



# Ranco Inc.

COLUMBUS 1, OHIO

Ranco  
REPLACEMENT  
REFERENCE  
No. 1544

World's largest manufacturer of refrigeration controls



# Hotel Ups Bookings as Big Central Station Unit Conditions Convention Hall

**Owner Convinced of Conditioning Need  
Despite 66° Average Summer Temperature**

SANTA BARBARA, Calif.—In neighboring Montecito where cool Pacific breezes keep temperatures in the low seventies even during July and August, air conditioning has been installed in the new convention hall of the Miramar hotel.

This unusual application is reported by Mainland Heating and Air Conditioning Co. of Santa Barbara which installed the equipment.

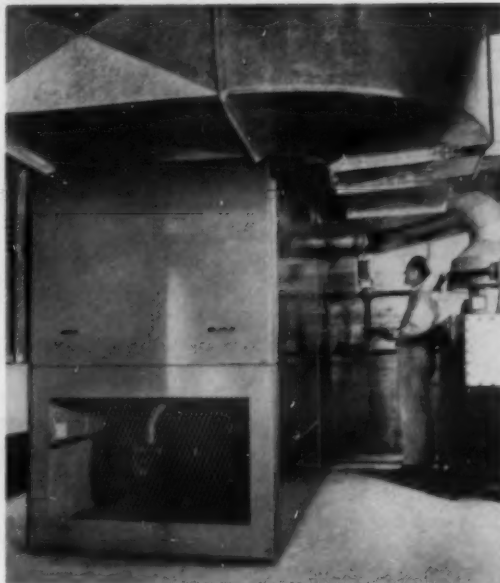
Located on the Coast Highway to San Francisco, about 100 miles north of Los Angeles, the hall is within a few hundred feet of the Pacific Ocean. Summer temperatures average 66°.

Despite its near perfect year-

round climate, Santa Barbara had never had convention facilities until last October, when Paul Gawzner, owner of the Miramar hotel, completed his project which involved extensive remodeling of a huge garage. He called upon the United States Air Conditioning Corp. dealer to install an all-weather conditioning system in the new hall.

Gawzner was convinced that although the outside temperature is moderate, the mercury would shoot up on a crowded convention floor. Humidity and cigaret smoke could add to the discomfort.

The installation has already



SELF-CONTAINED, central station unit located in a corner of the basement, cools the convention room, the large entrance foyer, two rest rooms, and two bars of the Miramar hotel in Santa Barbara, Calif.

provide the ventilation needed in this type of installation.

The RK unit, which contains in a single casing all the elements of a central air conditioning plant including evaporative condenser, was factory-assembled and tested so that installation was accomplished on the job with only three connections: to power, ductwork, water supply and drain.

## Overhead Ductwork Hidden In Ceiling

An unusual feature of the installation is the overhead ductwork in the hall which is virtually hidden above an egg-crate acoustical ceiling. Anemostats blend in with similarly shaped electrical fixtures. Additional ceiling diffusers are used in the foyer.

The unit is equipped with a hot water coil to provide winter heating. Changeover is automatic.

Robert Ingle Hoyt, AIA, of Santa Barbara designed the building; John F. Reardon & Associates of Encino was the engineer. Peter J. Davidson & Sons, contractor, handled the over-all remodeling job.

## 21-Story Bldg. To Be Fully Conditioned

CHICAGO — Complete year-round air conditioning is included in the \$1.5 million modernization program recently announced for the 21-story London Guarantee building here.

Completion of the air conditioning system is expected by next May 1, it was reported. The system, utilizing filtered air, will provide year-round heating and cooling.

Water will be drawn from the Chicago river, pumped through the system as a cooling agent, and returned to the river. Individual controls will enable tenants to adjust temperatures.

Call For Ready-Power  
**NATURAL GAS**

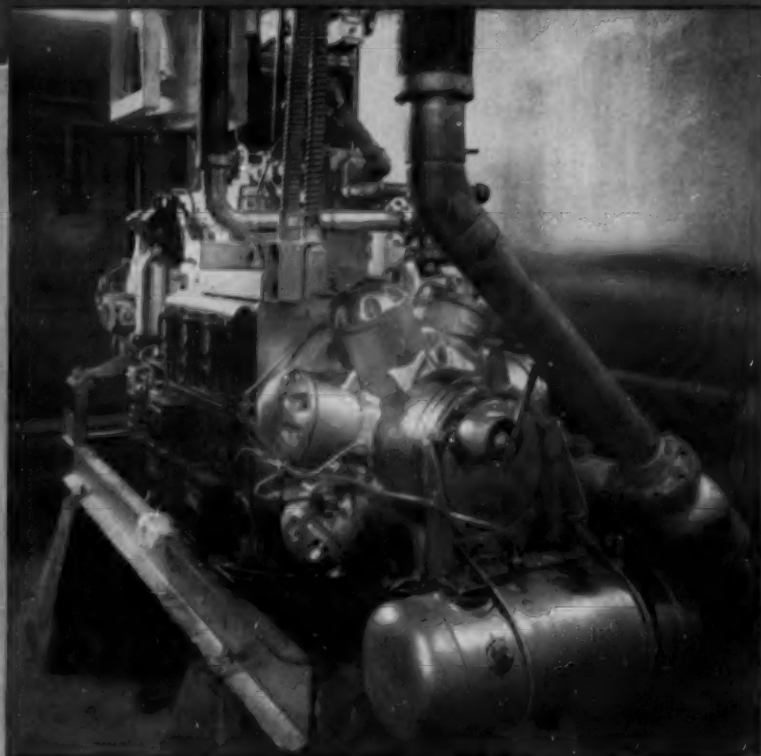
Air Conditioning

and give your customers all these advantages:

- economical Natural Gas fuel
- low, low operating costs
- continuous, variable speed operation
- close temperature and humidity control
- automatic controls
- thermostat or push-button start

Fuel cost  
less than  
**1¢**  
per ton-hour

based on gas at  
60¢ per 1000 cu. ft.



76 Ton Installation at a Country Club—St. Paul, Minnesota

Ready-Power Air Conditioning Units offer every advantage of automatic air conditioning—at lowest operating costs. Designed to operate efficiently on economical natural gas, Ready-Power Air Conditioning Units feature a unique system of capacity modulation for high efficiency continuous cooling.

Automatic controls allow continuous operation at varying speeds to meet all weather conditions and load requirements. This assures precise control of both temperature and humidity and maximum operating economy at all times.

Ready-Power Air Conditioning Units are adaptable to new or existing installations in sizes up to 76 ton. Multiple units of more than 150 ton capacity have proved highly successful.

Write for complete information.



Matched "Chiller Packages" are now available for all models. Factory piped, wired and tested, these Ready-Power "Packages" give you completely integrated refrigerant systems, require a minimum of installation work, reduce costs.

**READY-POWER**  
SAVES AS IT SERVES

THE READY-POWER CO. 11231 FREUD AVE. • DETROIT 14, MICH.

Manufacturers of Gas and Diesel Engine Driven Generators and Air Conditioning Units; Gas and Diesel Electric Power Units for Industrial Trucks

SO HALSTEAD & MITCHELL  
ENGINEERS SAID:

**"LET'S STOP  
COOLING TOWER  
RUSTING and  
ROTTING!"**



*Halstead &  
Mitchell*

BESSEMER BUILDING,  
PITTSBURGH 22, PA.

## RUSTING

There's no "one-coat" protection which will stop cooling tower rust. Needed are super-strength bonding of protection to metal, toughness, inertness, flexibility, and a water-tight barrier. Only by Halstead & Mitchell are you offered the 3-coat protection of Vinsynite, Vinyl Zinc and chlorinated rubber—the most advanced protection ever devised to prevent cooling tower steel from rusting.

## ROTTING

We do more than praise the long life of wood used in our wetted decks—we are the only manufacturer who offers a 20-Year Guarantee on wetted deck wood against rotting or attack by fungus.

AT LEADING WHOLESALEERS EVERYWHERE



## Thin-Styled Cabinet Is Feature of '57 King Room Conditioner Line

GLENDAL, N. Y. — New 1957 line of room air conditioners of King Refrigerator Corp. here feature five models, all with thin-styled cabinets.

M. Herbert Koeppe, president, said that for the first time he is not suggesting list prices for the units, but letting distributors set prices for their own markets.

This new "Streamline" series uses one cabinet size 20½ in. high, 25 in. wide, and 16½ in. deep. The firm has discontinued manufacturing rectangularly shaped room air conditioners.

Available in the last part of 1956, these room units can be placed under the window, through the window, or above the window, Koeppe said.

Models in the new line include: SL75S, a ¾-hp. standard unit with one-speed motor, thermostat, dial control, and throw-away filter and 8,200 B.t.u. rating; SL75D is a ¾-hp. deluxe model with two-speed motor, pushbutton control, exhaust, permanent filter, and 8,200 B.t.u. rating; SLA57, also ¾-hp., is a low-amp. model with all deluxe equipment, heavy coils, and 7,500 B.t.u. rating; SL1115 is a 1-hp., 115-v. unit containing all deluxe equipment, with 8,900 B.t.u. rating; and SL1000, a 1-hp., 230-v. model, has all deluxe equipment and 10,500 B.t.u. rating, the firm said.

## York Names Eastern Room Unit Wholesaler

YORK, Pa. — The Southern New England Distributing Corp. was recently named York room air conditioner distributor for that territory, it was announced by R. E. Cassatt, commercial sales manager, York Corp., subsidiary of Borg-Warner Corp.

Servicing a dealer structure of 336 outlets, the firm will distribute York room units in northern Connecticut and western Massachusetts.

W. L. Thibadeau is president of the company; D. A. Racocchia, general manager; and James Hogan, sales manager.

## Gas Cooling Pushed

COLUMBUS, Ohio — Development of 101 houses using gas for air conditioning and all major appliances is being cosponsored here by Ohio Fuel Gas Co. and five homebuilders.

## Nashville Area Room Unit Sales Up 28% for Year Ending Aug. 31

NASHVILLE, Tenn. — Room air conditioner sales for the year ending Aug. 31 increased 28% in Nashville and Davidson County, while centralized packaged units sales increased 62%, the Nashville Electric Service reported recently.

These were sales reported by distributors representing 33 brands.

Room air conditioner sales jumped from 12,355 units the previous year to 16,002 this year. Centralized packaged units

jumped from 641 units to 1,041 units.

The utility also reported that August sales of refrigerators were up 10% over the same month last year. Food freezer sales rose 50%, clothes dryer sales 155%, and range sales 15%.

For the first eight months, refrigerator sales were up 8%, freezers 32%, dryers 95%, and ranges 15%.

Appliance unit sales for the months and for the year to date were:

Appliance	Aug. '55	Aug. '56	8 Mos. '55	8 Mos. '56
Refrigerators	924	1,016	5,691	6,138
Freezers	177	226	1,194	1,576
Clothes Dryers	119	303	824	1,609
Ranges	680	788	4,620	5,336

## Dealers Told To Emphasize Specialty Room Unit Models To Up Profits In '57

CHICAGO — In order to realize a profit on room air conditioners, dealers will have to place greater emphasis on the specialty models — ¾-hp., 7½-amp. and 1-hp., 12-amp. units, according to Howard Haas, vice president of advertising and sales promotion for Mitchell Mfg. Co., Div. of Cory Corp.

Addressing a distributor meeting at which the company's 1957 room air conditioner line was introduced, Haas said prices generally will be higher on this kind of unit.

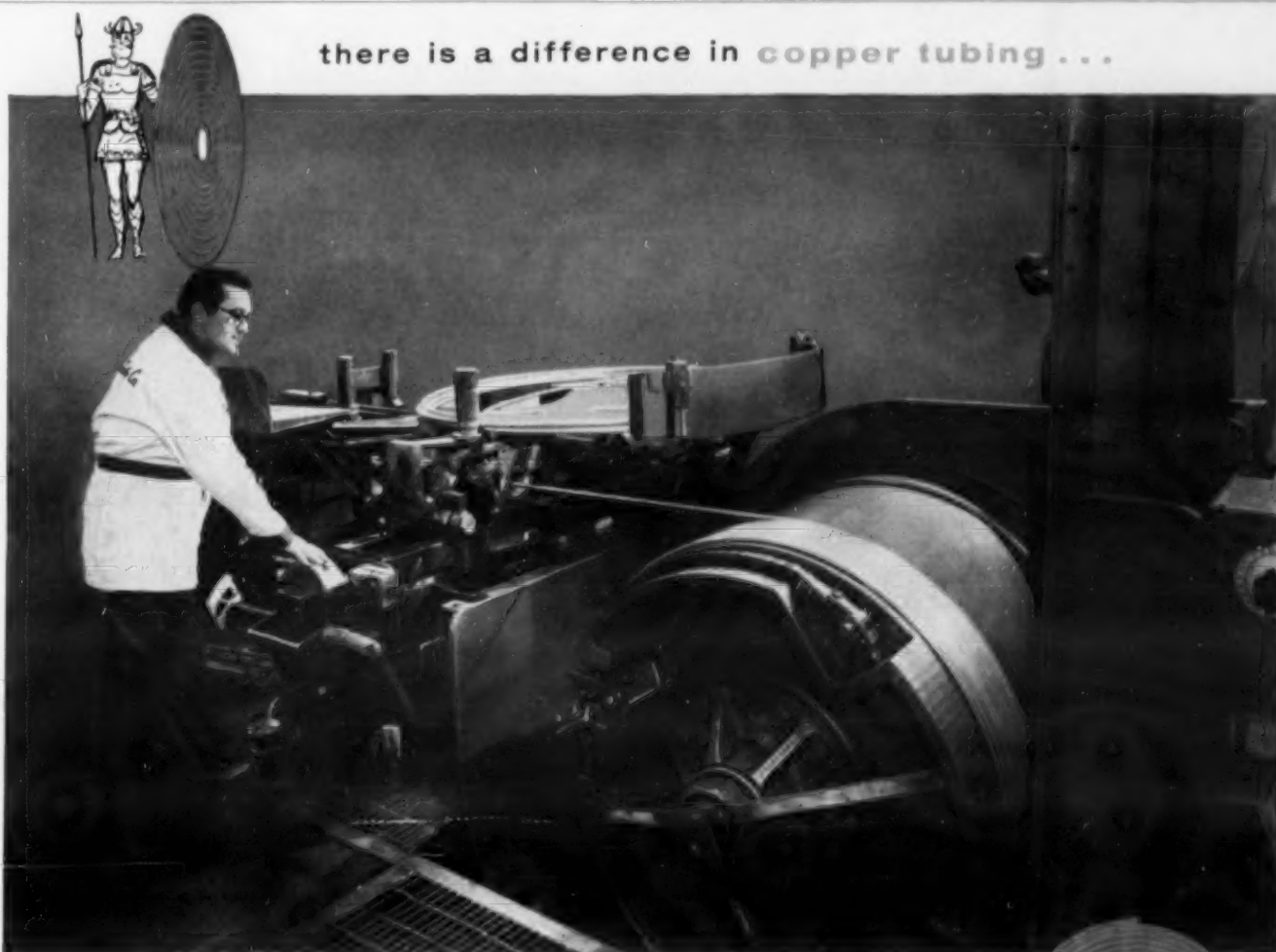
In its promotional program, Mitchell will emphasize "retail selling events," such as a "Free Spring Check-Up and Filter Program" in March and April to build goodwill for dealers; "Trade-In Days" in May and

June; and "Operation Saturation Advertising" in July and August.

Eugene A. Tracey, Mitchell's general manager, pointed out that the company has taken a "wait and see" attitude regarding the ARI agreement to make public the B.t.u. per hour cooling capacity ratings of units. Mitchell was the only major producer which did not sign.

"If the other manufacturers who signed the agreement follow through and publish B.t.u. ratings, we will certainly participate in the program," he was quoted as saying. "However, we will not be surprised if the ARI standard doesn't work."

Industry inventory is "about normal" at approximately 346,000 units, it was stated.



there is a difference in copper tubing ...

the difference in **VIKING** is

The "ENGLISH BULL" that draws to **PERFECTION**

To maintain the most rigid standards of precision and uniformity in drawing copper tubing, VIKING uses two 100-horsepower special made Bull Blocks imported from England — each with a capacity for drawing 1500 feet per minute continuous coils up to 1,000 ft. in length. A single "joystick" controls all machine operations, i.e. slow start, smooth acceleration, automatic stop and automatic repositioning of die head.

To insure careful and efficient handling, a specially de-

signed conveyor system, block loader and unloader move coils to and from the block.

The "Bull Block" is another illustration of how VIKING copper tubing is achieving higher quality, greater uniformity and dependability of service. It is "differences" such as these that are creating VIKING's increasing acceptance by the manufacturers of air-conditioning units and coils.

VIKING copper tubing continues to be the result of the combined efforts of skilled craftsmen seeking always to create a tubing that will do the job better, faster and at lowest cost.



**VIKING** COPPER TUBE CO.  
CLEVELAND 10, OHIO

PRECISION DRAWN SEAMLESS COPPER TUBING

### EXTRA STRENGTH

The proper kind of strength and ductility is vital in tubing used for refrigeration and air conditioning purposes. VIKING copper tubing possesses these properties to a far greater degree than other types of tubing. Its temper assures flawless fabrication.

### EXTRA FLEXIBILITY

Viking Copper Tube is soft and pliable, yet exceedingly rugged. It saves time and labor because it can be coiled, formed, flared and expanded quickly without danger of fracturing or splitting.

### ELECTRONIC QUALITY CONTROL

An electronic "Brain" detects the minutest flaw or imperfection in the walls of VIKING tubing . . . automatically discarding defective tubing. Trouble-free fabrication is virtually guaranteed — operational failures almost completely eliminated.

## E-Z-SEE

LIQUID  
INDICATOR



NEW FLO INDICATOR FLAP  
SHOWS ALL FLOW CHANGES

Analyze flow, function of  
expansion valve, by means  
of E-Z to SEE sensitive flap,  
instantly responsive to  
variations in flow. Posi-  
tively leak-proof — hun-  
dreds of thousands in use.

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ZELIENOPLE, PA.



## Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

ing school district almost immediately.

"Comfort curtain," Mr. Norris's own name for the special heating and air conditioning equipment to be installed in the school, is the result of four years of research into the problem of maximum classroom comfort at minimum cost.

Estimated cost of the proposed classrooms is approximately \$15 per square foot.

This air conditioning system is designed to make almost instantaneous changes from maximum heat delivery to maximum fresh air delivery. An occupied school room more often presents a more crucial cooling problem, rather than one of

heating, Mr. Norris has learned.

"Once the pupils are in the room," he points out, "the heat they produce, heat from lighting, plus heat from the sun, all combine to boost heat loads above those normal to other types of buildings."

This is the first Lennox venture into the commercial air conditioning field, and no doubt Mr. Norris expects to make money out of it some day. In the meantime he will be collecting valuable data which will be useful to all parents and educators.

Who knows? Perhaps air conditioning will step up the pace of childhood learning to a degree which will help solve our nation's imperious shortage of classroom space.

### If You're on TV

Many, many years ago Colin Selph sold advertising for

REFRIGERATION NEWS. Now he is the general manager of a radio-TV station in Santa Barbara, Calif.

Mr. Selph issues this advice to businessmen, politicians, and other "amateurs" who suddenly discover that a speech of theirs will be televised:

"Be yourself. You either have it or you haven't. Be sure you are neatly dressed. Clear the papers, cigars, and such out of your pockets. Wear off-white shirts, leave your jewelry at home.

"Talk directly into the camera which is on you. That's the one with the little red light. Look just above the lens, not below it. Don't extend your arms toward the camera. If you have a heavy beard, shave just before you go on. If you have a bald head, powder it a bit to get rid of the shine.

"Above all, be yourself."

### Adult Education

Perhaps you've heard about the man who read Gibbon's *Decline and Fall of the Roman Empire* while waiting for his wife to do this or that.

There are other opportunities to keep abreast of vital developments in our times by reading newspapers and books in otherwise-wasted quarter-hours and half-hours.

#### Suggestions:

(1) Watch fewer TV programs unworthy of your attention.

(2) Carry a book in your bag, your briefcase, your pocket. Read while waiting to see someone, while waiting for a train, etc.

(3) Put a book under your pillow at night. If you can't sleep, read.

(4) Keep a book handy at home, when waiting for dinner

or for guests to arrive. Also keep one at the office for intervals between engagements, or for long-distance 'phone calls to come through.

(5) See our previous "Inside Dope" piece about not being foolishly anxious to crowd the exits of planes and trains.

### Is It Claustrophobia?

Incidentally, that "Dope" item about impatient-to-get-off travelers stirred up a lot of comment.

Some feel that eagerness to get off a plane or train indicates relief from fear that the conveyance won't arrive intact. (Yet, these same people drive automobiles—the real killers—blithely.)

Another theory: claustrophobia is rampant among the traveling public.

Neither of these theories seem tenable to many of us. To our way of thinking, "human cussedness" is responsible.

### Puzzle Fans: Attention!

Question: What is the highest mountain peak in Colorado?

If you quick like a flash answer, "Pike's Peak" (as 99 out of 100 do) you're wrong. There are 25 Colorado mountains taller than Pike's Peak.

Pike's Peak simply has been the best advertised down through the years. That's why you remember it, rather than the 25 bigger mountains.

Any questions?

### Coming Up

According to C. C. Walker, commercial vice president of the General Electric Co., the "home of tomorrow" will be a prefabricated, stressed-skin plastic dome, with moving partitions. It will have a ceiling which at night bathes the entire house in an even, indirect light, giving a sense of vast spaciousness.

Automatic heating and cooling will be supplied in many cases by a heat pump, reduced in size by about 30%, he predicts. The eye-level refrigerator will be a free-standing unit, with a drawer-type freezer underneath. Automatically it will dispense ice water, ice cubes, and crushed ice.

Pots and pans will have thermostatically controlled heating elements which can be plugged in almost anywhere. The television set will comprise a large, flat picture on a convenient wall—already 60% accomplished today.

The home of tomorrow will be built around an electric core. It will be lighted, heated, cleaned, and cared for by electricity, Walker forecasts.

### MOTOR BASE ADAPTERS Sell Many Other Items

Keep them in stock. Servicemen will pick up adapters and motors, carry them in their cars, and complete service on the job in one call. Eliminates delay of having motors away for rebuilding. Adapters are easy to install, fit any base. No motor shaft too long or too short. They also bring you more sales in motors, belts, pulleys, controls, etc.

SIZES FOR 1/4 to 3 H.P. Inclusive  
Engineering Research Associates, Inc.  
3475 East Nine-Mile Road  
Hazel Park, Michigan

tested and proved throughout the nation...  
the BIG advance in Air Conditioning!

**GOVERNNAIR**  
SCU

**SELF  
CONTAINED  
UNITS**



PAT. NO. 2,297,928

● COMPLETELY FLEXIBLE to meet any special load conditions or space requirements.

GOVERNNAIR has been building completely packaged air conditioning units longer than any other company in the field. Today, this valuable experience gained, in making hundreds of different types of installation, can benefit you on nearly any type of job you may be planning.

For, only GOVERNNAIR offers the installation advantages of compact one-unit design . . . combined with our manufacturing flexibility that enables you to successfully meet unusual load conditions, space or multi-zone requirements.

Added to this is the GOVERNNAIR reputation for quality-engineered, longer life products . . . designed to operate at maximum efficiency and economy. Write for full information.

ORIGINATORS OF COMPLETELY PACKAGED AIR CONDITIONERS. READY TO OPERATE WITH SIMPLE ELECTRICAL, WATER AND DUCT CONNECTIONS

**GOVERNNAIR**  
SCU

GOVERNNAIR CORPORATION • 513 N. BLACKWELDER • OKLAHOMA CITY, OKLA.



AIR CONDITIONERS



EVAPORATIVE CONDENSERS



COOLING TOWERS



UNIT COOLERS



BLAST COILS FOR HEATING AND COOLING



# Why Buy?



"Why should we buy your product?" is a question manufacturers have every right to ask. And it's a question that Wolverine can answer with good, solid reasons.

In the first place, Wolverine Tube has grown up with the refrigeration and air conditioning industry—knows the industry's problems and its needs. The result is tubing and tubular-shaped parts specifically designed to do a better job—save manufacturers time and money.

Another good reason is Wolverine Tubemanship—the combination of years of metalworking experience, constant research, sound engineering and the pride skilled craftsmen take in their daily work.

Still another reason is the vital interest Wolverine displays in its customer relations. Close cooperation between the customer and Wolverine's Field Engineering Service often results in significant improvements in the customer's finished products.

These are but a few of the reasons why customers come back time and time again to buy Wolverine products and services. To join their ranks—specify Wolverine next time you order. What Wolverine Tubemanship means to you is graphically told in a new Wolverine booklet: Tubemanship. Write for your copy—today!



## WOLVERINE ROLL-O-TUBE®

Typical of Wolverine ingenuity is the way Wolverine packages copper refrigeration tube sold through wholesalers to refrigeration service engineers. The carton is round—can be used as a reel—is easy to open—protects unused tube. Wolverine's new tube seal keeps inside diameters clean, bright and dry.

DIVISIONS OF  
CALUMET & HECLA, INC.  
CALUMET DIVISION  
WOLVERINE TUBE DIVISION  
CANADA VULCANIZER  
& EQUIPMENT CO., LTD.  
FOREST INDUSTRIES DIVISION  
GOODMAN LUMBER CO.



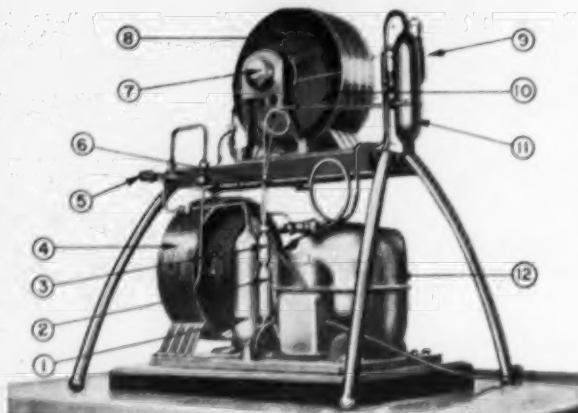
## WOLVERINE TUBE

Division of Calumet & Hecla, Inc.  
1413 CENTRAL AVENUE, DETROIT 9, MICHIGAN  
Manufacturers of Quality-Controlled Tubing and Extruded Aluminum Shapes

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES.

EXPORT DEPT., 11 E. 40TH ST., NEW YORK 16, N.Y.





- ★ 1 spun end receiver—Copper
- ★ 2 drier—High side, 1" diameter, 14 gram capacity
- ★ 3 filter—Copper, with conical Monel metal screen
- ★ 4 condenser— $\frac{3}{8}$ " I.D. x 9 fin aluminum tubing
- ★ 5 back-seating valves
- ★ 6 suction line—Copper
- ★ 7 motor—Complete with fans—9 watts, 115 volts, 60/50 cycle, single phase, Type CW
- ★ 8 evaporator— $\frac{3}{8}$ " I.D. x 9 fin aluminum tubing
- ★ 9 drier—Low side,  $\frac{3}{4}$ " diameter, 7 gram capacity
- ★ 10 copper capillary tubing—.081" O.D. x .031" I.D. 5 ft. long
- ★ 11 accumulator—Spun end—copper
- ★ 12 compressor—1/5 h.p.—hermetically sealed

★Parts produced and fabricated from seamless, non-ferrous tube by Wolverine Tube.

## Wise Buy!



†A patented process RE 22465

Take a look at the typical refrigeration cycle above. It's loaded with Wolverine products . . . all designed for long life and top performance. All are "wise buys!"

That's why so many refrigeration and air conditioning manufacturers come to Wolverine. They know, for example, that when they specify Wolverine Capilator® they'll get capillary tube with flow characteristics that will meet their specifications.

They know, too, that with Wolverine Trufin®—the integral finned tube—they can boost heat exchange capacity—design smaller, more effective units.

Year in and year out, engineers have discovered the complete dependability of Wolverine copper and aluminum refrigeration tube. It has practically become a standard practice to use Wolverine tube for liquid and suction lines and for evaporator and condenser coils.

Then there's Wolverine unique Spun End Process†—a process loaded with extra dividends—the kind that save time and money in the production of one-piece tubular shaped parts, such as accumulators, receivers and dryers.

On your next order—specify Wolverine—put yourself on the track of some real "wise buys." Write, too, for your copy of Wolverine's Refrigeration Catalog.

DIVISIONS OF  
CALUMET & HECLA, INC.  
CALUMET DIVISION  
WOLVERINE TUBE DIVISION  
CANADA VULCANIZER  
& EQUIPMENT CO., LTD.  
FOREST INDUSTRIES DIVISION  
GOODMAN LUMBER CO.



### WOLVERINE TUBE

Division of Calumet & Hecla, Inc.  
1413 CENTRAL AVENUE, DETROIT 9, MICHIGAN

Manufacturers of Quality Controlled Tubing and Extruded Aluminum Shapes

Wolverine Trufin is available in Canada through the Unifin Tube Company, London, Ontario.

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES.

EXPORT DEPT., 13 E. 40TH ST., NEW YORK 16, N.Y.

5011W90 5505



Meet Dec. 11-13

### 3-A Committees To Discuss Vendors' Sanitary Standards

WASHINGTON, D. C.—Sanitary standards for coin-operated bulk milk vendors, ice cream freezers, and farm holding tanks are on the agenda for the semiannual meeting of the 3-A Sanitary Standards Committees to be held Dec. 11 to 13 at the Elms hotel in Excelsior Springs, Mo.

The committees are composed of representatives from the United States Public Health Service, International Association of Milk and Food Sanitarians, and the Dairy Industry Committee.

### LaCrosse Names Montgomery Vendor Sales Representative

LA CROSSE, Wis.—Appointment of John W. Montgomery to represent its vending machine division in Virginia, Maryland, Delaware, New Jersey, and the District of Columbia was announced recently by the La Crosse Cooler Co.

Montgomery will headquarter at 4511 Tyson St., Philadelphia. He was formerly sales manager of Philadelphia Bottling Co.

La Crosse officials said that with this appointment, the company now has complete representation in the eastern states on its coin-operated vendors.

### Research Foundation Receives Data on Fin Spacing of 4 per In.

COLORADO SPRINGS, Colo.—Noting that an earlier report from a project on frost formation on refrigeration coils (University of Illinois—W. F. Stoecker and O. W. Clausen) contained data on tests with close fin spacing (9 per in.), the Refrigeration Research Foundation said recently that a report now has been submitted on wider spacing (4 per in.).

"We cannot present the data," TRRF stated, "but here is a general conclusion:

"A coil of wide fin spacing, as compared with one with close fins and equal over-all dimensions, tends to operate less efficiently at low frost conditions but as frost builds up, the trend reverses. This is due to excessive drop in air flow as frost builds up in the close-finned coil."



### SIGHT GLASSES for Air Conditioner Refrigerant Systems

Quick visual checks on refrigerant can be made with Pyrex sight glass installed on the liquid line. Shows under or over charging, speeds servicing. Write Glass Division.

**SWIFT**  
Lubricator Company, Inc.  
1 Glass St., Elmira, N.Y.

## Koch Food Service Specialist To Develop Commercial Refrigerator Kitchen Uses

KANSAS CITY, Kan.—Appointment of Louise A. K. Frolich as food service specialist for Koch Refrigerators, Inc. has been announced by Chester K. Litman, president.

Miss Frolich's basic responsibilities will be the development of applications in the kitchen for commercial refrigerators, plus activity as a consultant, and director of food workshops and training programs for food service groups.

During the past year, Miss Frolich has served as senior home economist at the Midwest Research Institute.

On several occasions during that time she was retained by Koch for special jobs as consultant.

Miss Frolich has had wide ex-

perience in the field of home economics in both military and civilian capacities.

During World War II she was chief dietitian of U. S. Army hospitals in this country and France. During the Korean conflict she served as director of dietetic interns at Walter Reed hospital in Washington, it was announced.

She holds a reserve rank of captain in the Army Medical Specialists Corps, assigned to the Office of the Surgeon General, as mobilization designee.

Before joining Midwest Research Institute, she was food cost controller at Teachers college, Columbia university, and assistant professor of institution management at the University of Alabama.

## Restaurant & Bar Equipment

### Planned Soda Fountain Layout



DESIGNED TO HANDLE a heavy volume of traffic from a large office next door, the new Nelson's Luncheonette in Naugatuck, Conn. is equipped with a Stanley Knight soda fountain, refrigerated display case, salad section, and equipment stand for grill and deep frying. The layout, installed by Bowe Bros., Inc., New Haven, Conn., is planned to permit rapid, efficient service and continuous customer turn over, it is pointed out.

## Carrier's Great New Chipmaster Makes a New Kind of Ice!



**1. Crystal-clear chips!** If you think there's nothing new under the sun, you haven't seen the new Carrier Chipmaster or the exclusive new kind of ice it produces! Ice that's mighty easy to sell, which means it's a fast-selling machine! Here are thin, flat, clear chips of solid ice, turned out continuously and automatically. Here are chips that pack well, are easy to scoop and pour, do not freeze together into clumps, give fast cooling with their large cooling area. And talk about uses—think how this sparkling ice will add new zest to all kinds of drinks, new eye appeal to everything from salads to seafoods in lunch counters, cafeterias, soda fountains, restaurants, supermarkets, motels, hotels, hospitals!

**2. Rounds out the really complete line—Carrier!** You can say "sure, we've got exactly what you want!" to every single customer, if you're the man who sells Carrier's 13 icemaking machines. Carrier means: the Icemaker for cubes and three grades of crushed ice... the Flakemaster for dry, extra-cold flaked ice... and the Chipmaster!

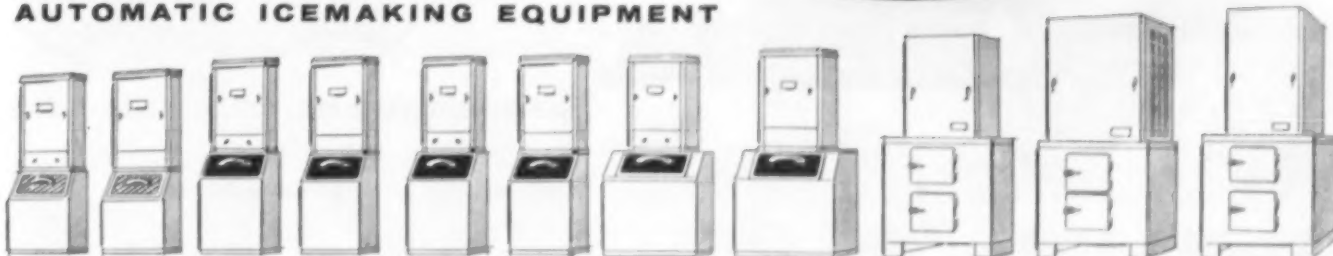
**3. Plus certified capacity!** No vague promises! Carrier gives a written pledge that the unit will deliver a specific number of pounds of ice, under actual local temperatures of water and air; with every Carrier Icemaker, that's your clincher every time!

Carrier Chipmaster, above, water cooled, has 500-lb. capacity. Air cooled model has 400-lb. capacity, at 90 degrees air, 70 degrees water, temperatures. 34" wide x 75" high x 30" deep. Storage bin capacity: 200 lbs. ¾-hp. hermetic compressor. Models for 110 or 220 volt A.C.

Want to get in the chips with the Chipmaster — and the complete Carrier line? You'll find your Carrier Distributor in the Classified Telephone Directory. Or write: Carrier Corporation, Syracuse, New York.

**Carrier**

### AUTOMATIC ICEMAKING EQUIPMENT



For more information about products advertised on this page use Information Center, page 24.



## Year-Round Central System Conditions 172 Four-Room Apartments In 43 Bldgs.

DALLAS—Believed to be the first installation of its kind in the United States, a central air conditioning system is serving 172 apartments in 43 separate buildings, at the Claremount apartments here.

Each of the 172 four-room units with four apartments to a building is fully air conditioned—summer and winter—with individual controls in every room.

According to Universal Air Conditioning Co., the contractor-engineers of the air conditioning system, the first "full season of cooling is now behind us and the performance of the job has been very gratifying.

"The system was designed to maintain 80° d.b. inside when the outside temperature was

100° d.b. Actually, the system held the inside temperature at 75° d.b. when it was considerably hotter than 100° d.b."

The chilled water system uses a single, centrally located 240-ton Trane "CenTraVac" compressor and a fan-coil "Uni-Trane" unit in each apartment.

### UNITS CONDITIONED AT NO EXTRA COST TO TENANTS

The 172 four-room apartments have been air conditioned at no extra cost to the tenant even though the apartments rent for less than \$90 a month, compared with \$125 to \$175 a month for competitive units.

The 240-ton CenTraVac was placed in a central equipment room along with four gas-fired water heaters. The heaters pro-

vide the hot water for heating. The over-all capacity of the CenTraVac may appear smaller than might be expected because of the diversity of the cooling load. However, the peak cooling loads vary for the areas at different hours of the day so that the 240 tons are adequate.

### ONE PIPE NETWORK CARRIES HOT, COLD WATER

A single network of pipes carries hot water in winter and chilled water in summer to the four apartment buildings.

Conditioned air is discharged into a plenum and is distributed through high sidewall supply grilles to each room. The 9-in. depth of the air conditioner made possible easy concealment in the ceiling and resulted in saved closet space which otherwise might have been used.

Cooling or heating capacity of the air conditioner is controlled by a three-speed fan switch mounted on the wall.

## Air Conditioners Among Builder Supply Items In New B-W Builder Sales Div.

CHICAGO—In a move to supply builders with a complete "basement to roof" package of home equipment, household appliances, and building materials from a single source, Borg-Warner Corp. has announced the formation of its Builder Sales Div.

The division will be headed by Joseph P. Halpin as general manager. Halpin previously was national sales manager of the Norge Builder Div. Prior to that he held a similar position with Admiral Corp. He was also formerly associated with Crosley Distributing Corp. in New York City.

Borg-Warner produces many products for the building trade, including Norge refrigerators, freezers, automatic washers, clothes dryers, and water heat-

ers; York air conditioning systems; Ingersoll porcelain enamel sinks and bath tubs, vitreous china water closets, and sun-resistant window screens; and Reflectal insulating materials and lightweight cement emulsions.

Other home building products may be added to the line, the company said.

Commenting on creation of the division, Robert S. Ingersoll, Borg-Warner president, said:

"We now can coordinate the different divisions' individual sales efforts where the building trade is concerned. We now can sell our home equipment products and building materials as one complete package—or the builder may buy any part or parts of that individual package."

The sales objective of the new division will be to reach the large residential builders, and builders of hotels, motels, mobile homes, prefabricated housing, and apartment buildings, it was stated.

## Market Awards Customer Full Home Conditioning System with Installation

NEW ORLEANS—Nicholson's, a New Orleans supermarket, recently presented a lucky customer with what is termed one of the most novel prizes ever awarded by a grocery firm.

The store gave away "a complete home air conditioning system!"

Its winner also received free installation, the firm announced.

The entire home cooling system—described and pictured in all Nicholson's advertisements—was the new "Airtemp 1118." Marketed by Airtemp as a single unit, the 1118 includes air conditioner, registers, thermostat, and air ducts, it was noted.

## Outlet Appoints Lerch As Vice President

RICHMOND, Va.—David W. Lerch has been appointed vice president of Sampson Distributing Co., Inc. here, distributors of Norge home appliances, Fedders air conditioners and DuMont television.

Lerch was formerly district manager for Norge Div., Borg-Warner Corp.

This appointment also marked the 5th anniversary for Sampson. Expanding sales have necessitated the opening of a branch office in Roanoke, Va. at 361 Naval Reserve Ave., it was explained.

## MANUFACTURERS REPRESENTATIVES

for well-known line of compressors, condensing units, water chillers and cooling towers 5 to 60 tons. Knowledge of air conditioning necessary—a number of important territories are now available. No objection to heating or other compatible lines. Write fully, BOX A5669, Air Conditioning & Refrigeration News.

OVER **5** MILLION

Curtis prospects...

Your prospects

saw this full-color sales message

in  
The Saturday Evening  
**POST**

a new, aggressive and continuing national advertising campaign to increase sales of Curtis equipment, this full-color sales message in the Post was driven home to more than 5 million prospective buyers of Curtis packaged air conditioning units.

If you are not a Curtis Dealer, and if you're qualified, now is the time to get started! You'll be selling the world's finest air conditioning equipment, competitively priced, and backed by a promotional-minded, on-the-go manufacturer with a solid 102 years of experience and skill.

Write today, and we'll show you how you can increase sales and profits with a complete, flexible line of Curtis Air Conditioning equipment.

Refreshing  
to the Eye, too!

yes...

this beautiful Curtis Air Conditioning Unit  
deserves to be seen!

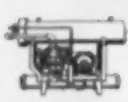
...and where water  
is a problem...  
here's the answer!

No question about it. The new CURTIS packaged air conditioner is refreshing. It is also silent, dependable, efficient and economical to own and operate. It refreshes by circulating masses of clean, crisp, dry, cool air.

Remember  
you can count on  
our 102nd year  
**Curtis**



Packaged air cooled air conditioning units



Packaged liquid chiller up to 100 tons



Industrial air compressors



Auto Lifts single & two posts

MANUFACTURING CO.

Refrigeration Division

1912 Klenlen Ave., St. Louis 20, Mo.

CM-15



## Design Dependable, Compact Refrigeration Unit with Fast Pull Down To Meet Demands of 60-In. High Dairy Trucks

LOGANSPOUT, Ind. — Low height of garage doors at its loading warehouse has necessitated the use of specially constructed bodies on the fleet of milk trucks operated by Ray's Creamery here. These bodies, built by the Millington Truck Body Co., Inc. of Millington, Mich., have an over-all inside height of only 60 in.; and over-all length of 12 ft.

Because of the relatively low height, and the need to stack cases 4-high to carry a profitable pay-load, special consideration was given to design of all equipment that had to be installed inside the body. This was especially true of the refrigeration equipment.

Prime factor in design of the equipment was that it had to occupy a minimum amount of space in the truck. Other considerations were that it had to be dependable, it had to provide fast pull down after door openings, and it had to maintain a satisfactory temperature range throughout the day's delivery schedule.

Units selected were Kold-Hold plates manufactured by Kold-Hold Div., Tranter Mfg., Inc. These plates consist of two deep drawn pans, a refrigerant coil, fins, and a freezing solution or "eutectic." The coil, fins, and eutectic are sealed inside the pan.

When a refrigerant, usually ammonia or one of the "Freon" family, is passed through the coils, the eutectic solidifies. Useful work of the plate then occurs at the melting point of the solution, since, at that temperature, a solution will absorb a great deal of heat without changing temperature—just as ice does at 32°.

Four Kold-Hold plates are used in each of the Ray's Creamery trucks—one at the forward end, two on the street side, and one on the curb side. These are installed horizontally so that they occupy a minimum amount of headroom. Actual dimensions of the plates are: 48 in. in length, 18 in. in width, and 3½ in. in thickness.

Accessory equipment in the truck includes two fans and necessary tubing to connect all four plates in series, allowing them to be charged from a single compressor.



The fans are mounted in the extreme front, side corner. One is a 220-volt turbine-type unit wired with the compressor. This fan runs all the time the truck is on the charging line.

The other, a 12-volt blade-type unit, is used to circulate air during deliveries, and is controlled by a switch on the dash. Loading doors are wired to turn off the fan when they are open.

Normal routine at Ray's is to load the trucks from 4 until 8 p.m., allowing 8 to 10 hours of line time.

LEFT: Interior of Ray's Creamery truck is only 60 in. high. Special consideration was required to design refrigeration equipment for them due to small amount of space.

## Schachner To Head Coldmobile Div.

CHICAGO—Max H. Schachner has been named manager of the Union Asbestos & Rubber Co.'s Coldmobile Div., it was announced recently by John F. Corcoran, vice president and general manager of the company's transportation equipment group.



Schachner will be responsible for engineering, development, and sales of Unarco's Coldmobile Div. products, Corcoran said. He further added:

"Our present plans call for the substantial expansion of this division. We feel there is a tremendous potential market

in the field of truck refrigeration."

Schachner, who will maintain headquarters in the company's Blue Island, Ill. plant, was secretary-treasurer and general manager of the Transicold Corp. of Los Angeles prior to joining Unarco.

Transicold manufactures refrigeration units for over-the-road truck trailers. Coldmobile manufactures refrigeration units for both home delivery trucks and over-the-road trucks and trailers.

A graduate of Syracuse university, Schachner began his business career with Continental Motors Corp. in Muskegon, Mich., and subsequently worked for the Caterpillar Tractor Co. in Peoria, Ill., and the General Motors Corp., where he served as general sales manager of the Detroit Diesel Div., prior to World War II, it was disclosed.

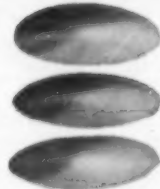
## MUELLER BRASS CO. ONLY Linemaster DIAPHRAGM LINE VALVES HAVE THESE 2 EXCLUSIVE FEATURES



This completely redesigned valve is available in five straight-thru and angle types with flare, solder and M. P. T. connections. See them at your wholesalers . . . Take some along . . . and on your next service call install them . . . You can't do better for your customers.

### 1. SUPER SEALING

A phosphor bronze diaphragm between two stainless steel diaphragms gives the LINE-MASTER an unbeatable combination for super sealing and long life. Diaphragms pressure wear tested for thousands of openings and closings without failure.

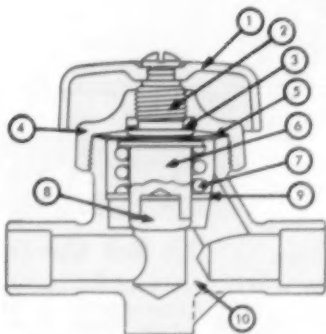


### 2. SUPER SEATING

In the LINE-MASTER, tough, resilient molded nylon seat disc insures positive shutoff even if foreign material is lodged against the seating surface. Mueller Brass Co. pioneered and proved the superiority of nylon for "super seating".



## PLUS 10 Ways better in design and construction

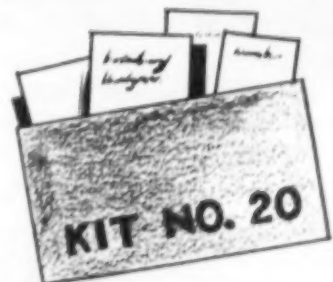


1. FORGED BRASS HANDWHEEL combines modern appearance and ease of operation
2. UPPER OPERATING SCREW produced from special, high strength bronze
3. NYLON SEAL eliminates operating screw seizure
4. FORGED BRASS BONNET has big husky wrench flats
5. PHOSPHOR BRONZE DIAPHRAGM and two stainless steel diaphragms service tested for thousands of openings and closings
6. STEM ASSEMBLY is guided to assure perfect seat alignment
7. CADMIUM PLATED STEEL SPRING assures positive return action of stem assembly
8. NYLON SEAT DISC is tough and dependable
9. SPRING SUPPORT RING made from solid brass
10. FORGED BRASS BODY sturdy, full flow design

**FREE!** ➡

Write today for Refrigeration Kit No. 20  
It's packed full of helpful information. Contains:

- 1) Refrigeration and Air Conditioning Data Book with big, 5-color refrigeration cycle chart
- 2) Complete Catalog R-155
- 3) Individual Product Data and Specification Sheets



**NOLIN**  
WALK-IN COOLERS

• BUILT BETTER  
TO LAST  
LONGER!

NOLIN MANUFACTURING COMPANY  
1400 LLOYD ST. PH. 3-4454  
MONTGOMERY, ALABAMA

MUELLER  
BRASS  
CO.  
STREAMLINE  
PRODUCTS

**MUELLER BRASS CO.** PORT HURON 9, MICHIGAN

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1956,  
Business News  
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F. M. COCKRELL, Founder

## 'The Conscience of the Industry'

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## VILTER EMPLOYE COMPLETES 63 YEARS OF SERVICE

Vilter Mfg. Co.  
Milwaukee 7, Wis.

Editor:

I have been reading "The News" ever since it was first published, that is almost since I started in the industry back in 1930.

The following information I believe is what you might call a human interest item.

Vilter Mfg. Co. advises that Herman Schulenberg of the Erecting Department celebrated

his 80th birthday on Oct. 16, 1956. He is the number one man in seniority having the remarkable record of 63 years of Vilter service.

Mr. Ervin Weinberg, Superintendent of Erection has just completed his 52 years of service on Oct. 3, 1956.

We don't see much Vilter news in "The News" so here is a chance to get started.

W. W. FULLERTON,  
District Manager

## AUTO AIR COOLING EDIT HAS SALES VALUE

Bevel & Associates  
Fort Worth 2, Texas

Editor:

Representing the Ara Mfg. Co. of Fort Worth, manufacturer of automobile air conditioners, I'd like to request a couple of copies of your Sept. 24, 1956 issue, in which is contained an editorial on the sub-

ject of automobile air conditioning.

We also request your permission to duplicate this article in its entirety giving due credit to AIR CONDITIONING & REFRIGERATION NEWS for the purposes of sales information and sales promotion.

GEORGE C. BEVEL, JR.

## Handy Way to Subscribe

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AIR CONDITIONING &amp; REFRIGERATION NEWS

11-12-56

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IMPORTANT: Company's Type of Business.....

They'll  
Do It  
Every  
Time

by

Jimmy  
HatloHow To Get Better Local Results  
From National Promotions

When manufacturers SPELL OUT in advance the extra profits a dealer or contractor can earn by cooperating with a special national promotion program, that program usually goes over the top in a big way.

Trouble is: special promotions (such as a product with a gimmick, a short-term price, a prize contest, etc.) seldom are explained adequately in terms of what they can do for the dealer, and what he should do for them. Each manufacturer's hopeful idea "push" not only must appeal to local salesmen's selfish interests, but must be SOLD to Mr. Dealer-Contractor in advance.

Otherwise it will be a bust.

**Best dealers and contractors** already are sold on brand loyalty, to be sure. But a sales manager's brainstorm which forces them to work harder for something they don't understand is another kettle of fish.

To enlist their help a reasons-why informative campaign, via field men and the trade press, is ultra-important. In effect, any special consumer promotion program requires a concomitant and concurrent special dealer promotion program.

First of all it calls for manufacturer recognition of the problem.

When a distributor insists that he cannot put a new Promotion Theme across, when he throws up his hands and argues that dealers complain and won't cooperate, an alert sales manager can mount a counter-offensive by sending newly-hired-and-indoctrinated salesmen out into that distributor's territory. Said salesmen are authorized to make "deals" (sometimes under the counter) with dealers to enlist their enthusiastic support of the "push." These "deals" are predicated upon specified local activities by the dealers.

**Stringent policy? Of course!** Expensive to the manufacturer, too. Often it acts like a cathartic on lethargic dealers temporarily. But what about their future relationships with the PUSHY manufacturer?

Wouldn't it be better (obviously it would cost less) to educate said local representatives, and enlist their support with substantial trade advertising to explain why the campaign is in their best interest? The manufacturer's salesmen may be suspected *per se* of trying to sell a pig-in-a-poke by

some dealers. A respected trade paper, on the other hand, lends credence and believability to any explanatory job.

**Freight prepayment** is another practical way to accrue dealer and distributor acceptance of a special promotion deal. Under such a system a price is quoted as "F.O.B. jobbing point" (meaning warehouse, no matter where it happens to be) or even "F.O.B. the retailer's showroom," if the manufacturer is willing to go that far.

When a system of this nature is installed, risks are calculated in the same way that insurance percentages are figured. Many national sales organizations (even though they deem it a mild form of bribery) utilize it as a shot-in-the-arm tactic.

**It would be much less costly,** and much more effective, to enlist voluntary retail support by methods mentioned previously.

What basic measurement-of-values should a manufacturer consult in establishing a special promotion deal, then? Perhaps he should consider the following factors in respect to the particular product he is "zooping."

(1) Its individuality—will the special program open up a specific and unusual, but potentially big new market?

(2) Its promotion cost—will the extra sales volume cover extra expenses?

(3) Its stability—will there be a "kick-back" against the promoted product later? Will present sales merely borrow from the future?

(4) Its profit potential—will a "crash program" return handsome profits not only for the manufacturer, but also for franchised dealers and distributors?

(5) Its cooperation quotient—will the dealer educational campaign inaugurated by the manufacturer be big enough to underpin the consumer program?

**Nearly everybody agrees** that to promote a hot product or idea the manufacturer must spend above-and-beyond-normal budgets for consumer advertising. Dealer cultivation is equally important.

Remember, no matter how clever or worthy your idea, it must be sold to dealers (or contractors, or whatever they call themselves) before they will cooperate. They can make or break any national campaign.



## SLANTS on Service

"Slants on Service" is a handy "package" devised by the NEWS for its busy readers.

### How To Prevent Damage to Doors

Flapper doors in refrigerated warehouses strong enough to withstand the impact and abrasion of fork trucks often fail at the bearings because the screws are pulled out of the door frame.

A solution to this problem has been devised by P. J. Morrissey of Security Warehouse & Cold Storage Co., San Jose, Calif., and passed along to the industry by the National Association of Refrigerated Warehouses, Inc.

"It should be noted that the closer to the bearings the door is hit, the greater will be the impact force on those bearings," further points out Morrissey.

"All our flapper doors are equipped with bumpers protruding from the center and bottom of the door so that even though the fork truck approaches the door at a slight angle, the load hits in the center of the door," he explains. "These bumpers are of a tear-drop design and protrude 3 in. out from the door at the greatest point," he said.

Main point of Morrissey's method of hanging these doors, however, is to use steel plates in the door frame and cap screws for attaching door hinges to the frame.

After conventional wood screws have been pulled out of the wooden door frame several times by the impact of fork trucks on the flapper door, the frame is permanently damaged and must be replaced—a costly operation.

"The problem," Morrissey says, "has been solved in the following way: 1/4-in. by 6-in. steel has been rigidly secured to the door framing timbers with lag bolts. This steel lines the top and the sides of the door, and in addition to the lag bolts is securely bolted to the concrete floors on both sides of the door.

"The door hinges are then secured to the steel frame with 3/8-in. cap screws. It has been our experience that the cap screws will give before the door or door frame is damaged. In effect, the cap screws act as shear pins protecting the door and door frame from damage. When the cap screws do break away from the steel casing, it is only necessary to remove and replace them with new cap screws," Morrissey further explains.

### AIR CONDITIONING SALES ENGINEER

M.E. degree or equivalent with sales experience for nationally-known manufacturer of compressors, condensing units, water chillers and cooling towers 5 to 60 tons. Sold through manufacturers agents to contractors. Traveling required. Profit-sharing plan. Write fully as to experience, education, salary earned and desired, etc. to BOX A5668, Air Conditioning & Refrigeration News.

## Baldrige Represents Tork In Southern Area

MOUNT VERNON, N. Y.—Fred C. Baldrige of New Orleans has been appointed sales representative for Tork time switches in Louisiana, Mississippi, western Tennessee, and southern Alabama. His offices are at 2237 Constance St.

The announcement by Dorset J. White, director of sales for Tork, emphasizes the fact that coverage in the area will be much improved, previously being covered from St. Louis, Atlanta, and Dallas offices.

Baldrige was with Texas Power & Light Co. of Dallas for five years, serving as assistant supervisor of power plants, substations, and transmission lines; and with the George E. Anderson Sales Agency as district manager, and later, partner.

## Mfrs. To Furnish Sheets Suitable For Wholesaler-Published Catalog

SAN FRANCISCO — Starr Hull, executive secretary of the Air Conditioning & Refrigeration Wholesalers, reported at the recent fall meeting of the Western Refrigeration Wholesalers Association that manufacturers have agreed to make up sheets suitable for the use of wholesalers who publish their own catalogs.

These sheets will be a standard size (8 by 11 in.) but will be prepared with reference material in condensed form, it was stated. Information that formerly took 25 pages will be reduced to about five pages.

The WRWA meeting was held at Alisal Ranch near Solvang, Calif. Wholesalers from Arizona and California attended the meeting and met with representatives of manufacturers in a general discussion.

The ARW director for Region 9, W. C. Miessemer of Arizona Refrigeration Supplies, Inc., Phoenix, Ariz., made his director's report. Wholesalers at a closed session had a general discussion about trade matters.

During the fall meeting, WRWA members decided to hold their annual meeting on April 4 at the Sheraton Palace hotel in San Francisco. The annual meeting will be the day before the start of the three-day educational forum to be conducted in San Francisco April 5-7 by the Refrigeration Service Engineers Society with the cooperation of the Air-Conditioning & Refrigeration Institute. Western Refrigeration Whole-

salers Association membership is in Arizona, California, Nevada, and Utah, which are the four states of Region 9 of ARW. Most WRWA members belong to ARW.

Current WRWA officers are: President, R. A. Nicol of Allied Refrigeration Supplies, San Diego; secretary-treasurer, O. G. Phillips of Phillips Refrigeration Supplies, San Diego.

## Carpenter Cuts Prices on Some Pipes and Fittings

UNION, N. J.—Prices have been reduced as much as 15% on all types of rigid unplasticized polyvinyl chloride pipe and fittings offered by the Alloy Tube Div., Carpenter Steel Co.

Covered in the price drop, effective Sept. 20, were PVC No. 1 and No. 2. Changes apply to all schedules ranging in size from 1/4 to 6 in. nominal pipe size, the firm explained.

# 5 WAYS BETTER

...the A-P Model No. 209  
All-Purpose Valve



0 to 1 1/4-ton Freon 12.  
Pressure limit range,  
0 to 55 lbs. Available for  
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A-P liquid charge allows mounting valve and capillary in any ambient temperature... with perfect control assured.

THE Model 209 is the most versatile expansion valve ever offered to the trade. It will take care of any type of application — low, medium or high temperatures, any superheat and any pressure limit. Just think what this adaptability means to you. No wonder alert jobbers all over the nation stock and recommend A-P valves.

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CONTROLS COMPANY OF AMERICA

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**Johnson Transfers Sales  
Engineers Davis, Worden**

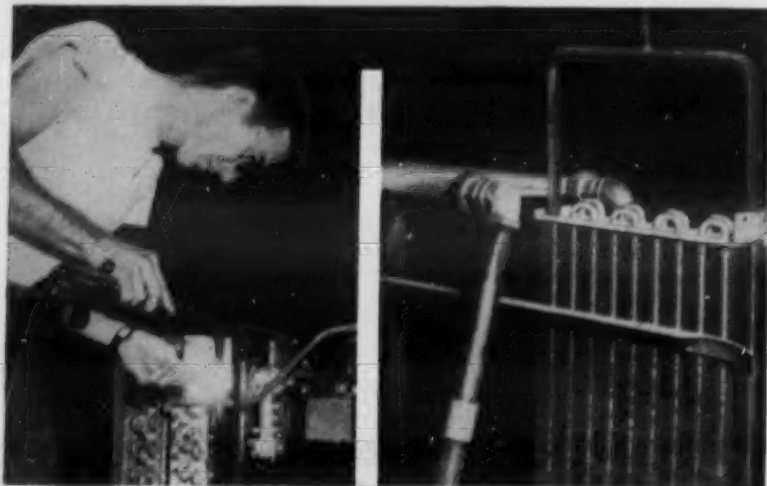
MILWAUKEE — E. Lyle Davis, sales engineer, has been transferred from Albuquerque, N. M. to the Los Angeles branch of Johnson Service Co., manufacturer of automatic temperature control systems.

The company has also announced the transfer of Arthur F. Worden, Jr., sales engineer, from its Milwaukee branch to the Buffalo office.

**H. W. Baker Forms Mfrs.  
Representative Firm**

SAN FRANCISCO — H. Wm. "Bill" Baker, graduate mechanical engineer formerly with Milmac here, has established the H. W. Baker Co. at 288 Seventh.

The new firm is manufacturers' agent for Acme Industries, Hubbell Corp., Peerless of America, and Titus Mfg. Corp. Baker is establishing distributorships and dealers in northern California.



**important  
announcement  
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customers  
brazing**



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If you are presently using United Phoson 15 alloy (government grade III) this is notification that a switch to Phoson 6, the most talked about brazing alloy in the country, will cut your costs at least 30 per cent with equal performance in every respect.

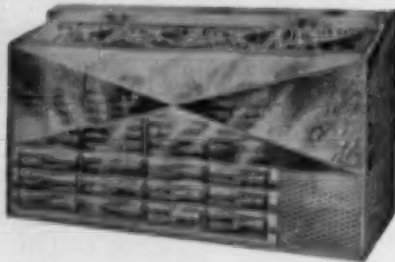
Extensive field tests—eight years of them—have proven Phoson 6 best for brazing copper and brass. Most of United's customers, 80 per cent, in fact, have already changed.

**here's the story!**

Silver 6% ..... Brazing Temperature 1300°  
Copper 87 3/4% ..... Original Tensile 92,000 PSI  
Phosphorous 6 1/4% ..... Rockwell 15T 86  
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SOLD THRU DEALERS ONLY  
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MENOMINEE, MICH.**

AVAILABLE IN SIZES 4 to 10 FT.

**Water Quiz**

**Circulating Water Damage Prevention Said To Reduce  
Breakdowns, Give Major Long Term Maintenance Savings**

NEW YORK CITY — A ten-point quiz designed to test your knowledge of the operating difficulties caused by the water in air conditioning and refrigeration systems has been prepared by Water Service Laboratories here, chemical engineer and specialist in water treatment.

In releasing the quiz, the firm pointed out that the subject of the use of water in cooling systems "is of vital importance to those concerned with the operation of air conditioning or refrigeration installations.

"A proper understanding of the damage that the circulating water can do in such a system, and a knowledge of how such damage can be prevented, will substantially reduce the frequency of costly and annoying breakdowns, and will result in major long-term savings on maintenance.

**6 Operating Troubles  
Traceable to Water**

"What are the operating troubles that are traceable to the water? They are:

"(1) Damage by corrosion, (2) deposit of scale in refrigerant condenser and other parts of the system, (3) slime growths on water-contacted surfaces, (4) increased head pressure on compressors because of the insulating effect of the deposits, (5) clogging of spray nozzles and other parts of the circulating water system, (6) general loss of efficiency and consequent breakdowns."

Here's the quiz:

1. Oxygen absorbed from the air and dissolved in water is the primary cause of corrosion by water.

True..... False.....

2. Carbon dioxide, also absorbed from the atmosphere by the water, accelerates corrosion.

True..... False.....

3. Circulating water in cooling towers, air washers, and evaporative condensers tends to become more corrosive than ordinary waters.

True..... False.....

4. Water in closed circulating systems is not corrosive.

True..... False.....

5. Soft waters contain little or no calcium and magnesium compounds. They are, therefore, not corrosive.

True..... False.....

6. If water is completely softened, it becomes non-corrosive.

True..... False.....

7. Hard water contains larger amounts of dissolved mineral matter than soft water. Hard water is, therefore, always more corrosive than soft water.

True..... False.....

8. Copper tubing, copper pipe, and red brass pipe are subject to corrosion by water.

True..... False.....

9. A manufacturer installed an air conditioning system and cooling tower in his eastern office located in an industrial city. The water supply was soft. It can reasonably be expected that the circulating water will become strongly acid and corrosive.

True..... False.....

10. In the western office of the same firm, the water supply was hard and had a high alkalinity. The same treatment and chemicals should be applied to the water in both offices.

True..... False.....

**Correct Answers Given**

Here are the correct answers, according to Water Service Laboratories:

1. True. "If a water could be completely free from dissolved oxygen it would be non-corrosive. However, the removal of dissolved oxygen from the circulating water in an air conditioning system is obviously impractical."

2. True. "Dissolved carbon dioxide accelerates corrosion. The degree to which this action takes place depends upon the amount of CO<sub>2</sub> present, the temperature of the water, and the minerals dissolved in it."

3. True. "Circulating water is repeatedly brought in contact with large volumes of air from which it continually absorbs corrosive gasses."

4. False. "Theoretically such systems are considered to be 'closed' in the sense that the same water remains in them indefinitely, and after its corrosive effect, or its scale-forming effect, has been expended, no further action should take place.

"However, experience has demonstrated that the turnover of water in such a system may be high because of leakage at the stuffing boxes of the circulation pump or otherwise, and the replacement water that is fed will cause trouble unless suitable chemical treatment is

applied to it. Because of the relatively small turnover of water in closed systems, the cost of such treatment is small."

5. False. "Soft waters are likely to be corrosive. They contain so little film-forming mineral matter that if they contain even small amounts of dissolved oxygen and carbon dioxide they will cause serious corrosion of water-contacted surfaces."

6. False. "The reverse action (Concluded on next page)

No. 6 in a series on refrigeration



DIAGRAM A

The above Diagram represents another beautifully engineered example of operational efficiency. It is known as a Pole Cat, so called because if one comes your way, your best bet is to climb a pole.

The Pole Cat eats grapes, nuts, bolts, raisins, etc. Unlike other devices that extract only vitamins and such from the intake of food, a Pole Cat extracts interline elements. These are processed in a noxiating tank, or bladder.

In combat the Pole Cat assumes a retreating stance, then attacks! Wh-a-a-sh!

But how does it do this? We don't know exactly, but something triggers something and whatever that something is, it is a small efficient working part that corresponds to VAPOT in well engineered refrigeration installations.

VAPOT we know all about. We developed it, manufacture VAPOT and supply VAPOT at a cost so low that sometimes we think we know nothing about advertising, merchandising and pricing.

What VAPOT does, always at exactly the right instant, is defrost. It dispels frost and ice right now. Wh-a-a-sh!

If you design or install or engineer or USE industrial refrigeration—such as in the hold of a ship or in a backroom where you make Frosty-Fizz, you can have improved refrigeration and save money too by acquiring a knowledge of VAPOT. Technical data, which is crystal clear to your engineers, is yours gratis. Write for it because it's important to you.



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## Water Quiz --

(Concluded from preceding page)

is frequently observed, and a water which was originally non-corrosive may become very corrosive as soon as the film-forming minerals are removed. Softening by the method usually employed in buildings does not remove the corrosive-causing dissolved gases, and when protective film-producing minerals are absent the water is corrosive."

7. False. "Hard waters may be either corrosive or non-corrosive. Hard waters are generally responsible for the formation of scale in the equipment."

8. True. "No commonly used piping material is immune to corrosion."

9. True. "In industrial cities, the air carries acid-forming gases such as sulfur dioxide and carbon dioxide released in the discharge of smokestacks and automobile exhausts. Cooling towers act as air scrubbers, and when the water supply is soft, the circulating water becomes strongly acid and corrosive. Failures due to corrosion in one to two years or even less have been observed."

10. False. "In this case scale formation rather than corrosion is to be expected unless the water is treated. By using the treatment intended to neutralize the acid condition of the soft water in the eastern tower, the scaling condition in the western city would be made worse."

"Ten correct answers marks you as an expert on water," says Water Service Laboratories.

"Seven to nine correct answers—very good. You are well informed on the fundamentals of water-causing difficulties.

"Five to seven correct answers—fair.

"Less than five correct answers—well, you can't be an expert on everything."

### ASRE Local Hears Address on Future Heat Pump Development

PHILADELPHIA—Arnold D. Spillman of the Philadelphia Electric Co. recently addressed the local chapter of the American Society of Refrigerating Engineers on "Future Development of Heat Pumps in Commercial and Residential Applications."

A review and discussion of several large tonnage heat pump installations up to 120 tons' capacity was presented and slides were projected showing actual installations in modern offices and stores.

### Wolverine Opens Offices, Mill Depot in Denver

DENVER—New offices and mill depot facilities have been opened in Denver to serve the customers of Wolverine Tube, Div. of Calumet & Hecla, Inc.

These service facilities will stock copper water tube, refrigeration tube, and automotive tube. It will be operated by W. G. Cline & Co., western agent for Wolverine Tube.

W. G. Cline will coordinate all operations from the new offices, which are at 4500 Kalamath St.

## Ansul Ups Plouff to Export Sales Manager

MARINETTE, Wis. — Promotion of L. Thomas Plouff, former manager of sales analysis and control, to the post of export sales manager for Ansul Chemical Co., was announced recently by Robert C. Hood, president.

Plouff succeeds the late C. Bernard Beidler. David Piszczek, former assistant to Plouff, succeeds him as manager of sales analysis and control.

Plouff, a graduate of the University of Notre Dame, joined Ansul in 1939. Piszczek joined Ansul's purchasing department in 1953 after graduating from college.



## M-H To Expand Commercial, Residential Temperature Control Panel Production

MINNEAPOLIS — Expansion of facilities for the production of "Supervisory DataCenter" temperature control panels for commercial buildings and residential heating-air conditioning control panels is announced by Minneapolis-Honeywell Regulator Co., manufacturer of the

panels. A \$150,000 addition will be made to link two Minneapolis buildings leased by Honeywell for the design, engineering, and fabrication of the two types of control panels. The one-story and sub-basement expansion will bring to 75,000 sq. ft. the

space now devoted to this type of production.

The commercial panels—called Supervisory DataCenters—serve as nerve centers for automatic comfort control in the 41-story Prudential Insurance Co. building in Chicago, the Bank of the Southwest building in Houston, Dayton's Southdale shopping center in Minneapolis, and nearly 100 other major buildings.

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## Almost 19,000 Buicks Get Factory, Dealer Installed Conditioners In First Half of '56; Up 50% over '55

FLINT, Mich. — Buick year when about 13,000 cars equipped nearly 19,000 cars with were air conditioned." Buick and its dealers equipped conditioners the first half of 21,000 autos with air conditioning during 1955, Ragsdale added. This year the firm expects to boost that figure to over 30,000. "The factory installs about 75% of the air conditioning equipment sold," Ragsdale said.

### AIR CONDITIONING FIELD SERVICE ENGINEERS

Opportunity for men approximately 30 to 40 years to assume field service responsibilities for one of the nation's largest producers of central, residential and room air conditioners. One in Kansas City, Missouri, other Cleveland, Ohio, including surrounding territories. Must be technically qualified to train distributor servicemen and handle service and application problems as they arise in the field. Personality and sales-service interest important.

Please send detailed resume airmail to:

Employment Manager, THE O. A. SUTTON CORP., INC., Manufacturers of VORNADO products. Specialists in comfort cooling appliances, 1812 West Second Street, Wichita, Kansas.

## Packaged Units Provide Cost Control, Flexibility For Growth To Air Condition Airlines Office Bldg.

NEW YORK CITY—Anticipating future expansion as its services grow, the Scandinavian Airlines System cools its new headquarters building in Queens by packaged air conditioners.

Because cooling demands of the unusual structure vary from floor to floor and, in some areas, from room to room, S. W. Barbanel, consulting engineer, installed three 15-ton units, two 20-ton units, one 25-ton unit, and one 30-ton unit.

### 140 TONS OF COOLING CONDITIONS 31,000 SQ. FT.

With a cooling capacity of 140 tons, these units condition and heat the present 31,000 sq. ft. of space in the building. All units are made by Typhoon Air Conditioning Co.

When more floors are added,

there will be no need to drastically redesign existing air conditioning or make costly alterations, Barbanel explained. New self-contained units can be installed as needed without inconveniencing the entire building.

### ANY SECTION OR FLOOR CAN BE SHUT DOWN

In addition to flexibility, the packaged units provide a cost control advantage, he added. Any section or an entire floor can be shut down when necessary. Heating coils in each unit ease the load on the regular boiler system, too.

Barbanel installed the 25-ton unit on the top (fourth) floor where a heavily glassed south wall produces very high heat gain through solar diffusion. A

duct cools the windowless interior zone equipped with separate thermostatic controls to compensate for the temperature differential.

On this same floor, the accounting room with its 45 employees and other offices of the east zone are cooled by a 15-ton unit with duct and diffusers to aid cooling control.

The third floor, having somewhat the same diverse cooling problem as the fourth, is handled by the combination of one 20-ton and one 15-ton unit. The shifting or increasing of both employees and heat diffusing electronic machines necessitated dividing the air conditioning tonnage into two unit zones. This way, should any radical influx of personnel or machines occur making the tonnage inadequate, only one unit need be replaced.

### FLEXIBLE METHOD ALSO USED ON SECOND FLOOR

This flexible method of air conditioning is also utilized on the second floor, where one 20 and one 15-ton package are installed.

The 30-ton unit was installed in the basement to handle both that windowless zone and the ultra-modern lobby on the first floor. The lobby, two thirds of which features floor-to-ceiling glass walled area without workable sash, is cooled by the use of two individually motorized dampers.

The basement houses cafeteria and lounge, mail room, superintendent's office and the supervisor's office.

To facilitate air conditioning, the architects, Kahn and Jacobs, specified workable sash every 18 sq. ft. of window glass for ventilation. The entire building has 4,600 sq. ft. of glass area.

They also added a 5-ft. air space in the roof to help counteract solar diffusion. The soaring, white enamel brick central tower at the front of the building houses all primary building service facilities in its central section. The two wings of the tower act as massive zone air intake and exhaust flues.

# Most powerful help a dealer can give himself to increase sales and income in air conditioning



## Correspondence Sales Training Course in Commercial and Industrial Air Conditioning

Here's something unique in the way of opportunity for dealers and their salesmen:

A Success Course in a timely field — Packaged Air Conditioning. Your teacher? General Electric—the name that signifies both Success and Packaged Air Conditioning. You'll get new dimensions in sales training based on General Electric's field-tested methods—and that means new dimensions in income for you.

In giving this course, General Electric believes:— IF A MAN CAN SELL he can be taught air conditioning— IF A MAN KNOWS AIR CONDITIONING he can be taught selling— IF HE KNOWS NEITHER he can be taught both— IF HE KNOWS BOTH you can make him tops in the field.

Whether you currently handle General Electric products or not, you are eligible to apply for enrollment in the course. We think this course will prove a tonic in success for you. Only \$7.50 for 8 lessons—less than a dollar a lesson.

## 8 POWER-PACKED LESSONS IN THIS GENERAL ELECTRIC COURSE

1. Sales opportunities and customer benefits.
2. The General Electric Packaged Air Conditioner.
3. How to make an application survey.
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5. How to find prospects and prepare proposals for them.
6. The Sales Presentation.
7. Shortcuts in selling air conditioning.
8. How to apply G-E Packaged Air Conditioners.

**PLUS:** A copy of General Electric's dynamic visual selling aid—"The Machine That Makes Money".

### YOU WILL RECEIVE UPON COMPLETION OF COURSE:

1. A handsome parchment certificate suitable for framing.
2. Handy 8-ft. steel tape measure complete with attractive leather case.
3. An opportunity for a profitable career selling packaged air conditioning to stores, offices, factories and institutions.

Get application for enrollment now from your local G-E Packaged Air Conditioning distributor or mail coupon below

Retail Sales Development  
General Electric Company  
Commercial & Industrial Air Conditioning Dept.  
5 Lawrence Street, Bloomfield, N. J.

Please send me, without obligation, your application for enrollment for General Electric's Packaged Air-Conditioner Correspondence Sales Training Course.

Name \_\_\_\_\_

Address \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

City \_\_\_\_\_

I am ☐ am not ☐ an authorized G-E Packaged Air Conditioner dealer.

### NuTone Air Conditions Western Regional Office

LOS ANGELES—Completely air conditioned offices are a feature of the new western regional headquarters of NuTone, Inc., manufacturer of door chimes and electrical items.

### ASPIR-JET SPRAY NOZZLES RAISE TOWER EFFICIENCY

The swirling, atomizing action of the water as it goes through the Aspir-Jet means more effective heat transfer and higher efficiency from any spray-filled cooling tower. Pressure as low as 1/2 pound gives effective water break-up and distribution. Formed of butyrate plastic, Aspir-Jets will not corrode.



Available through Refrigeration and Air Conditioning Wholesalers.

Manufacturers & Refrigeration Wholesalers: if you are not now using or stocking this outstanding new product, wire or write

### THERMAL AGENCY

National Sales Agents  
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## Proper Way To Start Up, Check Out Systems

This is the second in a series of articles by Mr. Lindsley covering some fundamentals in the installation, service, and maintenance of refrigeration and air conditioning systems.

The author of the articles has had many years of experience in directing refrigeration service operations, and in instruction on service problems.

By E. D. Lindsley, Mgr. of Technical Section,  
Air Conditioning & Refrigeration Service Div.,  
Worthington Corp., Ampere, N. J.

On most refrigeration systems the most critical moment in the lifetime of the equipment is the initial start-up period. During this period any improper functioning of the parts of the system may cause excessive damage to the compressor.

Excessive flooding of liquid refrigerant to the compressor, or momentary failure to lubricate the bearing or the compressor can cause the compressor to seize up or start failure of the bearings which may not show up until a much later date.

Before the initial start-up the entire system must be carefully checked. Special care should be taken to check the following:

1. All bearings oiled or greased should be checked for lubrication.
2. Water to the condenser or tower should be turned on.
3. All controls should be checked.
4. The compressor and fan motors should be checked for proper rotation.
5. The compressor should be checked for the proper amount of oil and the proper type of oil for the refrigerant used.
6. All service valves and solenoid valves should be open.
7. The electrical circuit should be checked out for proper use and line protections.
8. The system should be carefully dehydrated and leak tested.

After carefully checking the operation of all controls, solenoid valves, line valves, oil levels, and other critical points, the system should be ready for starting up.

The greatest danger to the compressor is liquid slopping over or failure of the lubrication system. On large systems it is advisable to throttle the suction line service valve and operate the compressor at a point just above the cut-out pressure of the low pressure control. The oil pressure should be checked as soon as the compressor is started to be sure of proper compressor lubrication.

After the compressor has been operated a few minutes at this low back pressure, the suction valve should be slowly opened until the valve is in its wide open position.

A careful check must be made during this period to insure that excessive liquid is not being returned to the compressor. Attention should be paid to the oil pressure as the compressor is operating, the oil level in the compressor and the temperature of the compressor and compressor motor.

After operating the compressor for a short period of time under these conditions, the operation of the various pieces of equipment in the system should be checked. The settings of the high and low pressure, oil

failure switch and the crank case heater should be checked.

The high and low pressure controls can be checked for the proper setting by slowly closing the suction line valve and observing the pressure at which the low pressure control stops the unit. The adjustment and operation of the high pressure cut-out can be checked either by throttling the water supply line

or throttling the discharge line service valve until the high pressure control stops the unit.

After these controls have been checked and adjusted, the expansion valves should be carefully checked and adjusted to the proper super heat and settings. The positions of the expansion valve bulb should be checked to insure that it is securely clamped in the proper location.

Clamp-on thermometers should be fastened to the suction line and the super heat properly adjusted. The super heat setting should be in accordance with the manufacturers' specifications.

If the compressors are provided with supplementary cloth suction strainer socks, it is usually impossible to make the final adjustments to the expansion valve until these are removed. The cloth sock should be removed from the suction line after the system is oper-

ated for from 6 to 8 hours.

If the socks are left in too long they will become dirty enough to cause an obstruction. This will be indicated by the suction pressure much lower than it should be. When this happens the socks should be removed, cleaned, and placed back in the suction strainers if they are excessively dirty.

After the suction strainers socks are removed and the system is cleaned, the oil should be drained from the compressor and the crankcase cleaned out. Fresh oil from factory sealed can should be added.

At this time a final adjustment of the expansion valve should be made and the system balanced. A performance test can then be run.

When running a performance test, readings should be taken of the voltage and current in all phases of the system, and the reading checked against the nameplate reading.

The entire system should be leak tested and all bearings should be rechecked for proper lubrication and alignment.

At the time the installation is turned over to the operator or customer, full instructions on the operation of the system should be provided. A clear understanding of the customers, and the dealers obligations should be gone over, the customer operator should be instructed in what he should do to keep the system in good operating condition.

Sometimes pieces of equipment fail such as the instance of bearing failure and motors on compressors, after a few weeks.

Quite often this is caused by excessive liquid or insufficient lubrication during the initial start-up period.

All parts of the system where leaks may possibly occur should be carefully inspected for signs of refrigerant leaks. All controls must be properly set.

## HENRY ASME relief valves

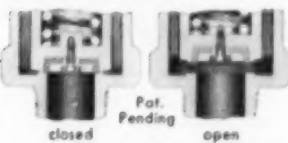
*for Extra Capacity  
Extra Safety*



Type 523 Straight-Through Relief Valves

FOR FREON  
AND SIMILAR  
REFRIGERANTS

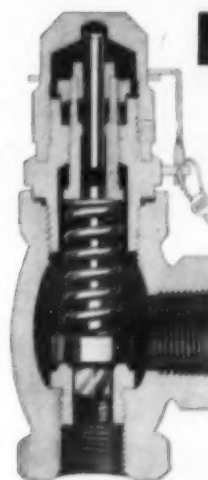
This relief valve has the Henry "Controlled Cushion" cup seat disc construction which prevents deformation of seating ring and assures consistent operation. This design provides positive relief at predetermined set pressures. Brass construction. Sizes (inlet x outlet) 1/2" M.P.T. x 3/4" Flare; 1/2" F.P.T. x 1/2" F.P.T.; 3/4" F.P.T. x 3/4" F.P.T.; and 1" F.P.T. x 1" F.P.T.



"Controlled cushion" cup seat disc construction

Type 52  
Angle Relief Valve

This forged brass valve is available in sizes (inlet x outlet) 1/2" M.P.T. x 3/4" Flare and 3/4" O.D.S. x 3/4" O.D.S.



FOR AMMONIA

Angle Relief Valve

Has soft metal alloy seat and push rod for emergency reseating. Stainless steel trim. Sizes (inlet x outlet) 1/2" F.P.T. x 3/4" F.P.T.; 3/4" F.P.T. x 1" F.P.T.; and 1" F.P.T. x 1 1/4" F.P.T.

All the above valves can be furnished at any desired pressure setting in the range of 50-350 P.S.I.

Write us for data sheet #AE-1303 showing new increased capacity ratings of these Henry relief valves.

See your Henry wholesaler for these certified relief valves.

HENRY VALVE CO.

Melrose Park, Ill. (Chicago Suburb)  
Cable: HEVALCO, MELROSE PARK, ILLINOIS

Specialized Manufacturers of the Complete Line of Relief Valves  
for Refrigeration and Air Conditioning





## Unit Produces 2,000 Lbs. of Crushed Ice Daily

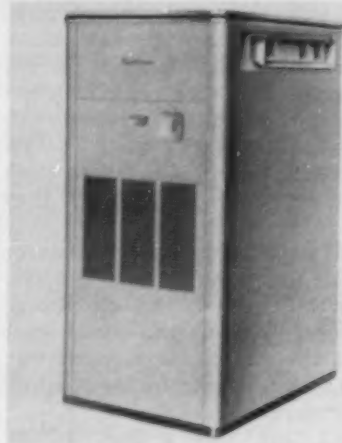
—KEY NO. F-1120—

ALBERT LEA, Minn.—A new "Scotsman" automatic ice machine designed for operations using large quantities of crushed ice has been introduced by American Gas Machine Co., Div. of Queen Stove Works, Inc. here.

This Scotsman Super Flaker—the SF-5—produces up to 2,000 lbs. of crushed ice per day, according to the manufacturer. The SF-5 produces small individual chips of hard dry ice that do not mat or clump together, it was stated.

The SF-5 connects to standard electrical connections and operates from water inlets and outlets 1/2 in. in size. The refrigeration system employs a 2-hp., 230-volt a.c. water-cooled compressor with "Freon-12" as the refrigerant. An automatic thermostat governs the production of crushed ice.

The SF-5 operates equally well with a portable or stationary type of ice storage bin, the company said. Scotsman "Super Bins" attach directly to the SF-5 and ad-



justable machine stands for the Scotsman Super Flaker are also available.

The Scotsman crushed ice machine is 24 in. wide, 32 in. deep, and 52 1/2 in. high, and occupies only 5 sq. ft. of floor space. It is attractively finished in a gray baked-on enamel.



## Furnas Cut-Off Switch Protects Water System

—KEY NO. F-1121—

BATAVIA, Ill.—Furnas Electric Co. here announces a new "Gard-it" low-pressure cut-off switch for water system protection.

Gard-it stops pump operation when water pressure falls below a safe, pre-determined operating level. Pumps and water-cooled motors are protected when water level in well drops below intake of drop pipe and operating pressure falls to cut-off point.

The Gard-it low-pressure cut-off switch, rated at 1-hp., 110-220 volts a.c., is actuated by operating pressure from pump. Each switch is pre-set at the factory to cut out at approximately 5 or 6 lbs. If other pressure settings are required, contact the factory.

Gard-it operates on the principle that when pressure drops to 5 or 6 lbs. contacts will interrupt line voltage to pressure switch, stopping pump operation. Pumping is resumed by depressing reset button, located on Gard-it switch. Automatic operation will continue as long as there is an adequate water supply to maintain normal operating pressure.

When used in conjunction with a magnetic starter and pressure switch, this new Gard-it will operate as a pilot control.

### CORRECTION

We regret an error which appeared in a recent issue concerning the properties of newly-introduced "Filtr-Aire," manufactured by Time Tested Products Co. of Houston, Texas, which uses natural hair as a filtering medium. Rather than "surfacing" its load, as we erroneously reported, Filtr-Aire will NOT surface its load to put damper on air flow.

## Temperature Controller Introduced by Burling

—KEY NO. F-1122—

CHATHAM, N. J.—A new series of differential expansion type temperature controllers has been announced by Burling Instrument Co.

Called the Models F-1C, F-2C, and F-3C, this series includes several new features and offers modifications which permit use in an unlimited number of applications.

These include accurate on-off temperature control of heating operations, processes, equipment, etc., safety alarms and cut-outs on similar installations, and combinations of control and alarm.

The choice of one, two, or three snap-action switches on any instrument makes many unusual installations possible. Temperatures from sub-zero to 2,000° F. can be handled; adjustable ranges as wide as 1,200 degrees in one instrument are offered.

Operation is by the difference in expansion of two concentric tubes when exposed to heat. The resulting movement is multiplied through a lever arrangement which actuates one or more switches.



## 'All-Climate' Electric Baseboard Heater Offered

—KEY NO. F-1123—

NEW YORK CITY—An electric baseboard home heater capable of meeting the requirements of any climate was shown here recently by Stuart L. Forsyth, manager of the electric heating for homes department of Westinghouse Electric Corp.

"This new baseboard unit replaces conventional home heating," Forsyth pointed out. "Installed against the wall in place of baseboards, the units provide heat both by radiation and circulation, giving instant warmth, quickly followed by a steady thermal flow throughout the room without drafts."

Subjected to months of testing, he reported, the baseboard heaters can be operated with furniture placed flush to them or with draperies hung above or against them. Maximum temperature of the vertical outer surface is approximately 100° F.—just above normal body temperature.

"This new electric heating system has been designed for the severest winter weather," Forsyth emphasized. "It will provide abundant warmth economically regardless of climatic conditions."

Installed in 2-ft. sections, as many units are used in each room as engineering specifications require. A control panel is coupled



into the heating system of each room, allowing room-by-room use and conservation of heat.

The units can be used in a single room or throughout the house. There are no moving parts in the unit.

Wiring required for the baseboard heaters is identical with 240-volt circuits normally used for conventional electric ranges and water heaters. Heater surfaces are of neutral brown hammertone enamel which can be painted any color desired. Designed primarily for surface mounting, the units can be recessed to mount against studding. Cleaning can be done with a regular vacuum cleaner.

In most areas, Forsyth reported, the Westinghouse baseboard heating systems will be competitive in operating cost with fuel oil heating.

## New design Refrigerant Condenser



...gives far more efficiency and better, trouble-free service

With this new, sectional design Niagara condenser you avoid the many troubles due to faulty condensing and get at all times the full capacity your refrigerating plant should afford.

You benefit from extra saving in upkeep labor and expense. The casing of this new condenser is made of sections each separately removable, giving you access to all parts for easy inspection to head off dirt and corrosion, to clean the coils easily from either side.

You benefit from greater efficiency in condensing. A simpler method of using evaporative cooling improves heat transfer. You benefit from Niagara features that remove super-heat before condensing and keep the system purged of oil. You save 93% of the cooling water cost.

You benefit from a low first cost, lower freight cost and less expense in erection.

Capacity range is from 90 to 240 tons. Write for Niagara Bulletin 131. Find out how your plant can save expense this season.

## NIAGARA BLOWER COMPANY

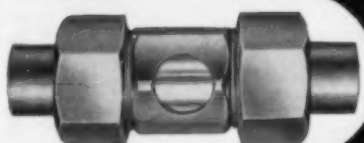
Dept. A.C., 405 Lexington Avenue  
NEW YORK 17, N. Y.

District Engineers in Principal Cities



Over 40 Years Service in Industrial Air Engineering

## NEW unit SAVES TIME on the PRODUCTION LINE



"250"  
SERIES  
LIQUID EYE<sup>®</sup>  
POSITIVE SEALING INDICATORS

6 sizes now available: 3/8", 1/2", 5/8", 1", 1 1/8" and 1 3/8" O.D.S.

designed to save you even more time and money.

The new "250" has all the proved Liquid Eye advantages plus these newly engineered features:

- A completely self-contained economy unit that's ready for immediate installation.
- smaller — more compact, simplified.

- designed to eliminate possible assembly errors.
- preformed copper extension eliminates need for separate gaskets — foolproof installation.

If you have a special problem, consult with Allin engineers. Custom units can be made to your exact specifications.

Write today for catalog covering the complete Allin line.



ALLIN MANUFACTURING CO.  
410 N. Hermitage Ave. • Chicago 22, Illinois  
Over 1,000,000 Liquid Eyes Sold to Date!

## Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

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(list name, page, and issue date)

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## Gibson Ranges Have Circuit Protector

—KEY NO. F-1124—

GREENVILLE, Mich.—Six free-standing electric ranges, five built-in ovens, three built-in and two set-in surface units comprising the 1957 Gibson line were announced recently.

Used for the first time is a circuit protector that is said to eliminate fuses for the lamp assembly and convenience outlet. It needs no replacement and can be reset from its individual switch button on the control panel. This unit will be standard equipment on all new Gibson free-standing ranges.

Another feature is the automatic "Roast Minder," the company said. After a skewer is inserted into roast or fowl an indicator shows when the meat is done.

Other new features include: a 2,600 w. high-speed "Faster-Than-Flame" surface unit; "Tel-O-Matic" light which tells whether correct settings have been made for automatic cooking; full-width hardware and overhead fluorescent lighting; seven heat pushbutton control for surface units, key color coded for identification, the firm stated.

Also "Thermatic Kook-All" with 2,000 w. microtube high-speed surface unit which shuts off at any sign of overcooking; concealed oven vent; combination automatic timer and minute timer; "Ups-A-Daisy" dual purpose cooker, a combination 6-qt. deepwell cooker and 8-in. surface unit; and a "Verti-Broiler" with two 1,800 w. high-speed heat rods for broiling both sides of steaks, chops, or lobster at the same time, affording smokeless broiling, the company noted.

## INSTANT-ICE MACHINES

SOME CHOICE TERRITORIES OPEN!

The most complete line . . . 14 MODELS!

Production ranges from 600 lbs. to 5000 lbs. per 24 hours. Air-cooled, water-cooled. Self-contained and remote models.

THE HIGHEST QUALITY LINE!

Precision-built . . . sold on quality, convenience and dependability.

WRITE NOW!  
for complete details . . .

**LIQUID FREEZE Corporation**

1133-24th ST. OAKLAND, CALIF.  
TEmplebar 6-0424

## Low Temp Chiller Features 4-Cu. Ft. Chamber

—KEY NO. F-1125—

CINCINNATI—A new low temperature chilling machine with a 4-cu. ft. chamber has been developed by Cincinnati Sub-Zero Products, manufacturer of industrial chilling equipment, it was announced.

The new unit, model SU-120-4, is designed for laboratory testing in regard to quality control and product development uses. It has a net thermal capacity of approximately 600 B.t.u./hr. at -120° F., with a temperature selection from 80° F. to -120° F., and full-range pull down in 45 minutes, according to the company.

Outside dimensions of the unit are: 59 in. high by 25 in. deep by 26 in. wide. The chilling chamber, 18 in. high by 18 in. wide by 17 in. deep, is made of electric-welded, pressure-tite 14-gauge steel, hot dip zinc coated to specifications of the American Hot Dip Galvanizers' Association. Rounded corners offer additional safety and strength.

The net clear working area is 18 in. high by 18 in. wide by 12 in. deep.

Full access to the chamber area is provided by the front opening door, which has a 12 in. by 12 in. multipane frostproof window. The door's positive triple seal is assured by three gaskets, two of sponge rubber, the third balloon type, it was noted. The chrome latch operates "with the touch of a finger."

Interior illumination is furnished by a 60-watt "Lumilite." An electrically-operated lifetime red light will remain on during normal operation, going off only in the event of power failure, it was added.

Refrigerant tubes completely surround the chamber with a "blanket" of sub-zero cold, the company said. The chamber wall is equipped with a Krack model F-90-BC fin coil and blower, which provides mechanical convection of air and uniform temperatures

throughout the chamber. The cascade refrigeration system is electronically leak tested.

By the addition of strip heaters, the temperature range can be extended to 200° F.

## Carnes Redesigns Sidewall Exhauster

—KEY NO. F-1126—

VERONA, Wis.—Carnes Corp. here recently announced a new redesigned model W sidewall exhauster with all-aluminum housing.

This new design features a more compact unit with a lessened over-all projection and a higher degree of ventilation through the motor compartment, it was noted.

The motor is mounted out of the airstream, and the backwardly inclined centrifugal wheel is available in four sizes with a capacity range of 150 to 1,850 c.f.m.

## Flush Mounted Case Developed for Switches

—KEY NO. F-1127—

CHICAGO—International Register Co. here announces a new flush mounted case for housing several series of "Intermatic" time switches.

"When all enclosures and wiring are to be concealed in the wall for a handsome, finished appearance, the new Intermatic flush-mounted case is ideal," the company said.

The case is available for use with TS60 standard on-off switches, the TS66 "Skipper" series, which permits operation on selected days, and the T670 series for short interval timings of 5 to 60 minutes.

The case is made of heavy-duty formed steel in a grey crackle finish with hinged door that may be had with or without a key lock for it.



# Again it's McCRAY

with 555 lin. ft. of Self-Service Cases

in the Fabulous New EAVEY SUPER MARKET



Produce Department  
66 lin. ft. self-service cases  
Meat Department  
253 lin. ft. self-service cases



Frozen Food Department  
132 lin. ft. self-service cases



When Henry J. Eavey wanted super merchandising cases for his great new Fort Wayne super market he specified McCray equipment — 555 lin. ft. of self-service cases; 4700 sq. ft. of storage coolers. His tremendous sales volume has emphasized again that McCrays are the cases for super sales! No wonder top operators are specifying McCray. Drop us a line for information about territory which may be open.

65 Years of Leadership  
In Building  
Dependable Commercial  
Refrigerators and  
Display Cases.



**MCCRAY REFRIGERATOR CO., INC., 1101 McCray Ct., Kendallville, Ind.**

For more information about products advertised on this page use Information Center, page 24.



## Airtemp To Feature 2, 3-Hp. Package Units To Lead 'Pro' Off-Season Sales Campaign

DETROIT—Basing its fall-spring "off-season" sales campaign on "A Pro Named Joe," Airtemp Div., Chrysler Corp. currently has two tours going—one east, one west of the Mississippi—to acquaint its distributors and key dealers with its merchandising programs.

Making its seventh stop here on a one-month nine-city tour of the eastern part of the nation, Airtemp staffers explained that once again the Nov. 1 to March 31 sales campaign offers prizes to successful salesmen. And heating sales now qualify for points toward awards.

### SEES BIGGER RESIDENTIAL, COMMERCIAL SALES IN '57

"We expect to sell more residential and commercial air conditioning and heating equipment in 1957 than ever before," declared Thom Muir, staff assistant to J. F. Knoff, vice president for sales, who is leading the eastern swing.

"You've got to be a professional to succeed in selling just as in anything else," said Muir. "So our sales campaign is based on a 'Pro Named Joe.'"

"Believing in the principle of packaged air conditioning equipment," Muir stated, "in January we are bringing out a new-style 2 and 3-hp. packaged unit to help our distributors and deal-

ers sell more air conditioning in the coming year.

"There are about 500,000 packaged air conditioning units now in use," he pointed out. "About 100,000 of these are 10 years old or older. At least, 5,000 of these are located here in Detroit and the market is there for many more."

Explaining why "we are dedicated to the packaged principle," Muir singled out the household refrigerator. He said its field assembly was limited, "but when it was packaged, we hit a volume market."

"With over 120 air conditioning and heating units available, Airtemp dealers can show the most comprehensive line in the industry," he claimed.

"To sell this air conditioning, there are four basic steps," Muir said. "And only a 'Pro' can do this properly. First you must develop a prospect. Then you must qualify him. Then you make a proposal. And, finally, you must close the sale."

Highlight of the 1957 sales push will be the Airtemp series 1100 packaged air conditioner, Muir continued. Slides were shown to illustrate "the many uses of the 1100 series, 'both in 'unusual' residential and small commercial applications."

William H. Denton, Airtemp southeast sales supervisor, came

on to direct distributors' and dealers' attention to the firm's "Residential Manual." Here is gathered, he said, in "this thesaurus of application," the accumulated knowledge we have gained from experimentation and from our dealers on residential air conditioning uses.

Divided into four parts, the manual covers heating, new units for both heating and cooling, add-on cooling, and new cooling units and their applications. Denton explained that judicious use of the book saves time in figuring home jobs.

### RESIDENTIAL MANUAL AIDS IN TRAINING SALESMEN

"This Residential Manual has another important value to the dealer," he emphasized. "With the manual's easy-to-use, step-by-step method, you can train sales people in a short time."

Second part of Denton's program was "Merchandising Tools." He declared that the difference "between a pro and an amateur" is that the pro "knows how to use the tools."

To meet the "terrifically expanding" residential, commercial, industrial, and automotive air conditioning market, Airtemp's national advertising will be directed to these markets.

Besides last year's "It's In the Air" film to help sell, ads will be directed toward architects and consulting engineers, top management, and consumers.

Included in Airtemp's 1957 merchandising campaign is a gimmick for the heating drive. A paring knife is sent with a letter, "Let us Show You!" This offers, "some reason," it was stated, to get a prospect to call the dealer for a heating inspection or repair.

It is estimated, he continued, that now there is a \$100 million market in industrial cooling. "This will rise to \$1.3 billion by 1965."

A much-tested personal letter has been devised for distributors, he added, to get a sales message into the office of a top man of an industrial plant.

Two industrial direct mailers, are available to help boost sales.

### Firm To Push Commercial Cooling

## Metropolitan Market Survey, 'Blitz' Campaigns Offered Distributors

DETROIT—Two new merchandising techniques—the metropolitan market survey campaign and the blitz campaign—are being introduced to Airtemp distributors and key dealers by the two Chrysler Corp. teams touring to acquaint them with 1957 Airtemp sales plans.

After trial and error methods of learning the efficacy of these programs, Airtemp now offers them on a nationwide basis to distributors.

### Market Survey Learns 'Who' Has Conditioning

The metropolitan market survey campaign is a plan whereby Western Union survey teams call small commercial businesses and learn whether these establishments have air conditioning, how long they've had it, what make and size it is, and any plans to change or add to present equipment.

If the owner or manager of the business says his establish-

ment is not air conditioned, the questioners ask if he contemplates installing air conditioning and when. In either case, the individual is queried as to his interest "in having an Airtemp dealer make a no obligation free survey."

### Prospects Result In 87% Completed Interviews

Prospects gained by this survey result in 87% completed interviews, says Thom Muir, staff assistant to F. J. Knoff, Airtemp vice president for sales. A "Lead-O-Gram" is then given by distributors to dealers containing information that the prospect is considering air conditioning within . . . . months.

In accepting the free no obligation survey, the firm gives its name, address, individual to call and his title, and phone number. Before sending the lead on to a dealer, the distributor looks up the firm's Dun & Bradstreet rating. If no action is taken on

(Continued on next page)

# NEW

## Marsh Testing Set



... with temperature scales for  
**Freon-12 and Freon-22**

The finest of testing instruments have been made still better. Pictured above are the new models of Marsh pressure and compound testing gauges . . . with two scales in color showing corresponding temperatures of Freon-12 and 22 . . . with greater pressure ranges in both gauges.

In the Compound gauge, the important retard scale has been increased to read from 0 to 80 lbs., and maximum reading is increased to 250 lbs. The range of the pressure gauge has also been increased . . . to 400 lbs.

Their precision bronze-bushed movements give them the remarkable accuracy of 1% of reading. Like their distinguished predecessors, they have the handsome, highly-polished brass cases with sparkling beveled-glass crystals. Threaded rings make it easy to remove the crystal, giving instant access to the Marsh "Recalibrator"—quickest and best way to maintain the high degree of accuracy vital to testing. Gauges are standard with 1/4" N.P.T. male bottom connection with restriction screw in connection. Dial size, 2 1/4".

No servicing kit is complete without this testing set. Write for details or **SEE YOUR JOBBER**

MARSH INSTRUMENT CO., SALES AFFILIATE OF JAS. F. MARSH CORPORATION  
Dept. D, Skokie, Ill.  
Marsh Instrument & Valve Co. (Canada) Ltd., 8407 103rd St., Edmonton, Alberta

# MARSH

## Refrigeration Instruments

GAUGES • WATER REGULATING VALVES • SOLENOID VALVES • HEATING SPECIALTIES

## FURNAS ELECTRIC CONTROLS do the best job for AIR CONDITIONING and REFRIGERATION



### SAVE WITH "In-Between" SIZES

Instead of just 5 Magnetic Starters in the 1 to 100 hp range, Furnas Electric offers you 9 sizes—the 5 standard sizes plus 4 "in-between" sizes. The many "in-between" sizes in the Furnas Electric line allow you to choose the control that is best suited for your particular job—at a saving to you in cost, space and capacity.

Write today for Bulletin 5411—1111 McKee Street, Batavia, Illinois



## FURNAS ELECTRIC COMPANY

BATAVIA, ILLINOIS

SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES



## Airtemp Offers 2 Campaigns--

(Continued from preceding page) this lead within 10 days, the distributor reserves the right to assign the lead to another dealer.

### Also Develops Prospects

"In this way," Muir said, "we obtain market information as to who has air conditioning and in addition we develop prospects. Finding out who is and who is not a prospect is a sound economic program for you," he declared.

The metropolitan survey plan was given a trial run in certain areas before the final plan was set up. In Washington, D. C. it was determined that there were approximately 11,900 commercial establishments that could be considered prospects for air conditioning.

Specially trained telephone solicitors were employed, and 80% completed interviews were obtained. A total of eight prospects worth contacting came out of every 100 phone calls at a cost of 33 cents each. The sales resulting in the year that the survey was used was well beyond the quota of 176 packaged units that had been established for the area.

One of the "plus" values of the survey in the Washington area was that one of the area's leading contractor-dealers, who sold other lines in addition to Airtemp, increased the Airtemp percentage of his total volume—because of the fact he got the leads from the survey.

### Western Union Survey Produced 87% Completed Interviews In Chicago Area

In Nashville the survey was made by a girl working out of her home, but this method resulted in only 56% completed surveys. In Memphis distributor personnel did the phoning, with 70% completion. However, when the Western Union survey method was used in a section of the Chicago metropolitan area, 87% completion of the interviews was realized, so that it was decided to go ahead with the telegraph firm's services.

### Trade-In Program Tied-In

Tied in with this survey are return cards sent out with letters offering those who have air conditioning an opportunity to get in on the "Airtemp Trade-In" promotion. By training salesmen to use a simplified form developed by Airtemp, the dealer can send salesmen out—instead of servicemen—to look over an existing piece of equipment, check its electrical characteristics and general condition, prepare an operating and owning cost analysis, and "show the prospect how he can benefit by trading-in his old unit."

### Replacement Opportunities

Opportunities in the replacement market were covered. The dealer can: 1) replace water-cooled packaged air conditioners with water-cooled units; 2) replace water-cooled air conditioners with air-cooled equipment; 3) replace central station equipment with either water or air-cooled units.

In supplement to this, where the load of the establishment

has increased, add water-cooled equipment to the existing water-cooled equipment, or supplement water-cooled units with air-cooled equipment.

When renovating equipment, Airtemp advises, rather than replace a specific compressor with a new one, replace the entire bottom half of these models with a suction cooled unit, "thus giving the purchaser a compressor with a five-year warranty and increase the over-all efficiency of the unit."

Replace a condensing unit portion of either Airtemp or competitive equipment with an Airtemp air-cooled condensing unit, it was added.

"There are literally thousands of small stores and offices which cannot stand the cost of new air conditioning equipment but who could pay for used equipment

which has been renovated," the company said. "These prospects can usually be uncovered easiest by advertising in the classified section of the newspaper under the heading 'Air Conditioning Equipment—Used.'"

"It is recommended that such ads state the size and price of the used equipment providing a 90-day warranty by the dealer, and stating the price of so many dollars 'plus installation.'"

### Leasing Equipment

There are many plans for the leasing of air conditioning equipment, Airtemp continued. The leasing of equipment has many advantages for both the lessor and lessee.

"One of our dealers in Indianapolis has been highly successful in the leasing business," it was stated. "The details of this plan are given in a supplemental instruction piece. This indicates how one Airtemp dealer oper-

ates his leasing business. Obviously, before using the plan, any other dealer should consult legal help and obtain local tax authority approval."

Special feature disclosed by Airtemp's team on new sales campaign strategy is the ABC "Airtemp Blitz Campaign."

### 'Blitz' Makes City Product, Dealer Conscious

Purpose of the "Blitz" drive is by mass impact on a city of from 5,000 to 35,000 population to make this city conscious of Airtemp and its products and the dealer who represents the firm in that city. Purpose also is to gain market information from commercial business establishments as to who is "air conditioned" and who is not, just as in the national market survey.

In addition, in the determination of who is air conditioned, it is learned the make, size, age,

and performance of equipment. By obtaining all this information, a complete file can be set up for future follow-up with direct mail and personal contact selling.

In describing the campaign, Airtemp said a specific town or city is chosen to be blitzed. The distributor, in cooperation with his regional office, will contact the dealer to set up the program.

Once the dealer is sold on the value of the program, the distributor's representative will contact the local Better Business Bureau or Chamber of Commerce to get their blessing for the drive. Manpower from the regional office and the distributor is selected in accordance with the requirements of the particular town to be blitzed.

This manpower will meet on the day of the campaign—it lasts only one or one-and-a-half

(Concluded on next page)

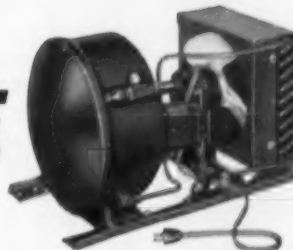
# IF YOUR END PRODUCT DEPENDS ON

**TROUBLE-FREE**



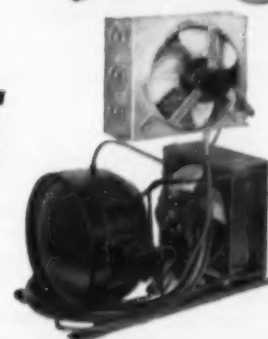
**COMPRESSORS**

**TROUBLE-FREE**



**CONDENSING  
UNITS**

**TROUBLE-FREE**



**REFRIGERATION  
SYSTEMS**

# WE CAN MEET YOUR REQUIREMENTS

COMPARE BEFORE YOU BUY! Prove to yourself that for trouble-free service, dependable performance and low operating cost, Kelvinator precision-built refrigeration equipment serves you best. If you have an application that calls for

hermetic compressors, hermetically sealed condensing units or hermetic refrigeration systems, a Contract Department Sales Engineer will help you determine the model best suited to your needs. Call or write today.

**American Motors Corp.**

DETROIT 32, MICHIGAN



**CONTRACT DEPT.  
KELVINATOR  
DIVISION**

**SPECIALISTS IN REFRIGERATION SINCE 1914**

For more information about products advertised on this page use Information Center, page 24.



## Airtemp 'Blitz' Campaign--

(Concluded from preceding page) days—and the leader will advise the men of the methods and procedures in which to survey the commercial business establishments. These men will then contact individually the commercial places located in this town to gain the information that the survey report form requests. From this information will be obtained the market information desired.

At the end of the campaign, Airtemp explains, a follow-up will be made to contact the leads obtained from the program.

Three days prior to beginning the blitz, an ad is placed in the local newspaper. Theme of this ad is that the "city has been selected by Airtemp Div. of Chrysler Corp. for a full scale air conditioning survey. All participants will be given tabulation results. Any courtesy shown Airtemp engineers while visiting the locality will be genuinely appreciated." It is signed by the local dealer. An ad is placed two days and one day before, and on the day of the blitz also.

All personnel conducting the survey meet in the selected city with the dealer there to map out survey program and receive instructions. Airtemp furnishes radio spot announcements and the distributor has them placed. He also handles all reservations and arrangements for a press and Chamber of Commerce luncheon with leading citizens.

On "B-Day," a kickoff breakfast precedes the survey. Then teams or individuals go to assigned sectors and begin a door-to-door survey. At lunch, the members meet to compare notes and re-group for the afternoon blitz. After completion of the

work, all dealer personnel meet for dinner with the members and hear an analysis of the results. These are carefully tabulated.

The following day, final tabulation is made if there is need for more survey. A mailing list is furnished together with a tabulation of results and thank you letter on the dealer's stationery.

Follow-up mailing is set up on a weekly schedule with a postcard the first week, a mimeographed letter with business heading typed in and personally signed by the dealer for the second week, according to Airtemp.

Personal calls on prospects lined up are for dealer personnel and distributor district managers for the actual follow-up. Three weeks later—on B-Day plus 21—a final summary of results with a tabulated showing of the number of businesses surveyed, the number of postcards mailed, the number of letters mailed, the number of phone calls made, and the number of prospects the dealer expects to close.

### 'Blitz' Tried Out In Small Towns

The "Blitz" campaign was tried out in a couple of smaller Alabama towns. The Airtemp Div. personnel who made the trial run on this survey found themselves well received by the townspeople being feted by the local chamber of commerce and getting advance publicity from newspapers and radio. Members of the survey team got badges which identified them properly.

In one of these cities it was determined that there were 285 establishments that could be considered prospects for air con-

ditioning. A team of seven people completed 254 surveys in a couple of days. It was found that of the 254 places contacted, 81 were air conditioned. Of the remainder, 48 requested that a residential air conditioning survey be made in their own home.

Muir proclaimed that there "are five things you, as an Airtemp Pro, must make the customer feel before buying."

"Too often, today," he said, "there is only one thing on which a sales pitch is based—price!"

He emphasized that "this is unsound. 'We can't hang our hats' on price!"

### 5 Decisions Before Buying

"There are five decisions," Muir reiterated, "that every person must decide before he buys."

"1) He wants something, and doesn't have it, therefore he has a need."

"2) He has determined he wants the product, but what model made by which company is it going to be?"

"3) He decides on the company, the source, for this product, but where is he going to buy it? At what outlet can it be obtained?"

"4) When is the time right? When should he buy it? Now—or six months from now, or when?"

"5) Finally he gets down to price. What he is accustomed to. What price his budget can stand."

In showing how Airtemp salesmen could use five decisions in buying to their advantage, Muir insisted they always be kept in the aforementioned order. "If you start talking about price first, working backward," he said, "you're sunk!" Reviewing a sales technique from last year, Muir emphasized that the "customer likes to have an opportunity to make a decision. Line up your Airtemp air conditioning and heating line before him and let him choose from that. Not a choice between you and your competitor's product—but a choice from among your own products."

Muir propounded a philosophy for selling in the "Pro Named Joe" campaign. "Next summer is going to be the hottest in years. We had a comparatively cool summer in 1956, but history shows this comes only once in about five or six years."

"Don't wait for a hot spell to get your prospect emotionally inclined to buy air conditioning. Stir up his emotions now! Next summer will be the hottest we've seen yet!"

### B & G Sets Up New Dept., Names Kosch Manager

MORTON GROVE, Ill.—Appointment of Philip C. Kosch to a newly-created post as manager, Development Builder Dept., was announced by R. E. Moore, president of Bell & Gossett Co. here.

He comes to Bell & Gossett after service as sales manager of Bryant Div. of Carrier Corp. Previously Kosch was associated for more than 15 years with the U. S. Machine Div. of Stewart-Warner where he was national director of sales training.

## What Was New At the Dairy Show In Atlantic City

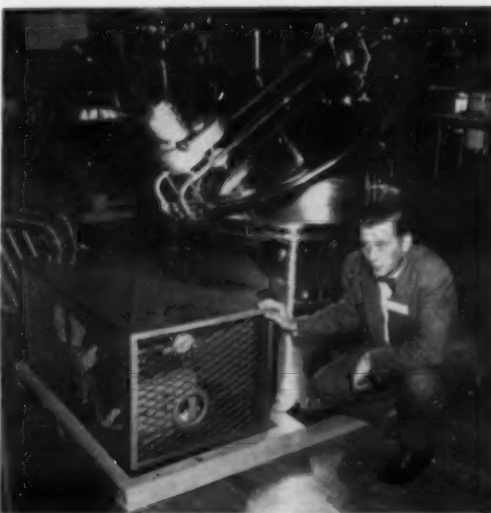
(Products on these two pages were shown at the recent 20th Dairy Industry Exposition in Atlantic City, N. J. Additional pictures of new products will appear in later issues of the NEWS.)



—KEY NO. F-1128—  
UTILITY CABINET FOR storage of school milk and milk cans has 24-cu. ft. capacity and is powered by a 1/2-hp. refrigeration unit. Grouped around the cabinet are W. J. Quirk (l.), president of Quirk Mfg. Co., maker of the unit, and A. F. Seekell and Dale Showerman, dairymen from Jackson, Mich.



—KEY NO. F-1129—  
CONTROLS complete for automatic operation are wired and installed on the control panel of Sunset bulk milk coolers. W. L. Mattson, sales manager of Sunset Equipment Co. (c), explains to two University of New Hampshire agricultural students.



—KEY NO. F-11210—  
SAVING 18 VALUABLE inches of space in a farmer's milk house is important enough to cause Groen Mfg. Co. to redesign its refrigeration unit to make it shallower and wider, according to J. G. Dunn, sales representative.



For dependable  
measurable  
performance

DEAN

### GOLD PLATES

There's no "guesswork" when you use Dean Cold Plates. They'll always give you top operating efficiency. Ideal for ice cream cabinets, locker plants, soda fountains, farm milk coolers, farm freeze cabinets, low temperature test rooms, frosted food refrigerators, window displays, food counters, refrigerated transportation and subzero applications for industrial chilling.

### Job-Tailored to Your Specifications

Any way you want them... that's the way Dean will "job-tailor" your plates for you. Consider the savings this means in time and money. Available in zinc metalized steel, stainless steel and other metals. In cylinders, U's, angles, tanks, etc. Write NOW for that special, made-to-order plate you need.

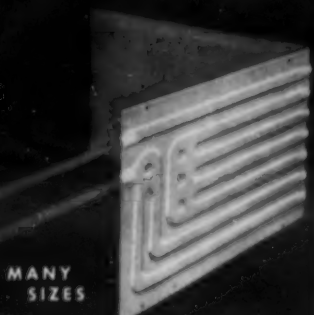
Send For Technical Data Book giving information on Dean Cold Plates for various applications

DEAN  
PRODUCTS, INC.

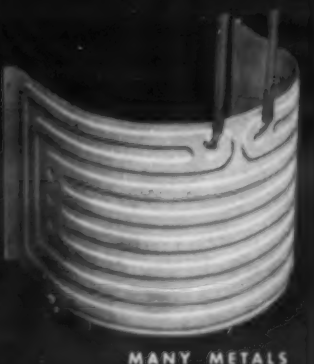
1042 DEAN STREET  
BROOKLYN 38, N. Y.  
STerling 9-5400



MANY SHAPES



MANY SIZES



MANY METALS

### JOIN THE

## COLDIN CAVALCADE



Cash in on the Coldin Profit Parade... the most comprehensive and diversified line of commercial refrigerators in America today. Write for catalogue.

Every Size for Every Need for Every Food Retailer

Coldin Cabinet Co., Inc.

2800 Webster Ave., N. Y. 58, N. Y. CY 5-3311





—KEY NO. F-11211—  
STANLEY KNIGHT's new 10-gal soda fountain is demonstrated at the Dairy Show by Walter Hutner, New York sales representative for the company.



—KEY NO. F-11217—  
AUTOMATIC DEFROSTING "Angle Vision" counter top ice cream merchandiser designed by Nelson S. Bloomenstein (I.) is exhibited by Fogel Refrigerator Co. Sidney Siegel (r.), assistant sales manager, said this model had to be put together out of pieces of seven units damaged in Fogel's recent fire.



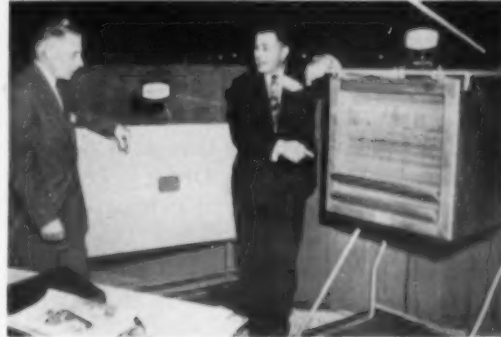
—KEY NO. F-11219—  
NEW "AIREA" CONDITIONER washes, cools, and heats the air and distributes it through the oscillating hood on top. Don MacKenzie, general sales manager of King Zeero Co. (I.), and J. I. Morrison, president of King Zeero, tell J. Patterson of Swift & Co. (r.).



—KEY NO. F-11212—  
NEW 7-CU. FT. MILK cooler that is claimed to keep milk well below critical temperatures under adverse operating conditions is displayed by Louis R. Zeamans, sales manager for Brewer-Titchener Corp.



—KEY NO. F-11218—  
LOW TEMPERATURE unit cooler and electric "Heat Cel" defrosting unit for all low temperature applications is examined by J. E. Hutchinson, Dole Refrigerating Co.'s new general sales manager (l.), and D. A. DeMore, Dole district manager in New England.



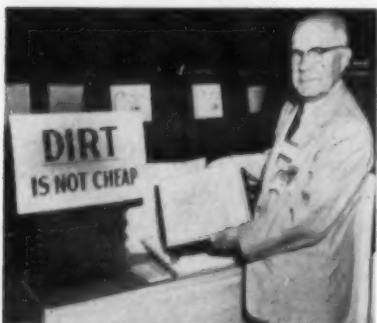
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—KEY NO. F-11216—  
NEW UNITED HOME MILK DISPENSER containing no wood at all in its construction gets a going over from Stuart Rabb (holding dispensing valve), in charge of dairy sales for United Refrigerator Co., and Frederick Cook and Warren Eddy of Dietrich Supply Corp. of Syracuse, N. Y.

For additional data on the products shown on these two pages please use the "Information Center" blank on page 24 of this issue. Refer to the Key Number which accompanies each picture.

## Business and Technical WRITER

wanted who has knowledge of heating methods and experience in the heating industry. This is an attractive long-range opportunity with top firm in its field. Send resume to BOX A5665, Air Conditioning & Refrigeration News.



—KEY NO. F-11213—  
HOW THE DUST MAGNET FILTER protects a condenser from "expensive" dirt such as clogs the unit at left is shown by C. Q. Sherman of C. Q. Sherman Associates.



—KEY NO. F-11214—  
ALL-ALUMINUM body with stainless steel floor features the 1,300-gal. ice cream truck exhibited by Barry & Bailey Co. At front of cab is 3-hp. Kold-Trux unit. Has double coil refrigeration plates, one for ammonia and one for "Freon."



—KEY NO. F-11215—  
THREE-FLAVOR "Cup-O-Matic" bulk milk vendor that adds any desired syrup to the cup as the milk is pouring in is demonstrated by its co-designer J. Walter Hunsinger (r.), service manager of Food Engineering Corp., to Lucia Bantis, company receptionist.

## NEW KRACK LOW TEMPERATURE Electric Defrost Unit Kooler Completely Automatic

- Fewer defrost periods needed.
- Insulated cabinet retains, circulates heat when closed . . . speeds defrosting.
- Internally wired for easy installation.

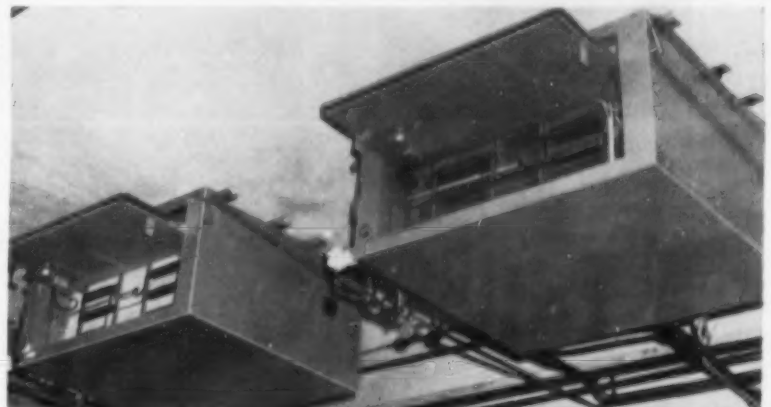
GET NEW BULLETIN ED-1055 for details and specifications!



REFRIGERATION APPLIANCES, INC.

901 W. LAKE ST., CHICAGO 7, ILL.

25th Anniversary in Refrigeration and Air Conditioning



WHOLESALE: United Refrigeration Supply. CONTRACTOR: Poletti Refrigeration Service. USER: Liberty Cash Grocery Warehouse, Memphis, Tenn.



CONDENSER FAN MOTOR  
1½ THROUGH 16 WATTS



## EASIER REPLACEMENT with NEW Redmond TYPE AM-4 SINGLE BEARING MONOMOTOR

All-Angle Operation—Interchangeability—Low Costs  
Make This Your No. 1 Replacement Motor

### These Features Are Your Assurance of Customer Satisfaction

1. INTERCHANGEABLE—Accommodates all standard brackets and special mountings.
2. ALL-ANGLE OPERATION—Designed for all-position mounting, vertical shaft up, shaft down, or any angle. Now you stock only one motor.
3. LIFETIME LUBRICATION—Extra large oil reservoir permanently sealed for lifetime lubrication. Guaranteed not to leak oil in use or shipment.
4. UNI-CAST® CONSTRUCTION—Gives a rugged, lightweight motor with smooth, whisper-quiet operation for years of continuous service-free use.
5. TRI-FLUX® DESIGN—Lowers operating costs through increased efficiency.



Redmond Distributors, Inc., Owosso, Michigan

REDMOND DISTRIBUTORS, INC.  
Owosso, Michigan.

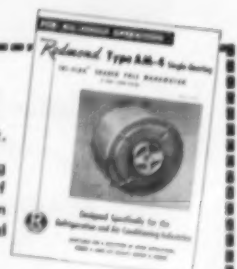
- ☐ Send me your new AM-4 booklet.
- ☐ Mail me your 4-page catalog describing the complete line of Redmond motors, blowers, fan blades, replacement kits, and accessories.

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_





## Designations of Fluorocarbon Refrigerants

Refrigerant	Boiling Temp. °F.	Chemical Symbol	'Freon'	'Genetron'	Isotron	Arcton	Frigen	Algeon	Kulene
11	74.8	$\text{CCl}_3\text{F}$	11	11	11	9	11	11	....
12	-21.6	$\text{CCl}_2\text{F}_2$	12	12	12	6	12	12	....
13	-114.6	$\text{CClF}_3$	13	....	....	3	....	....	131
13B1	-72.0	$\text{CBrF}_3$	13B1	....	....	....	....	....	....
14	-198.4	$\text{CF}_4$	14	....	....	....	....	....	....
21	48.1	$\text{CHCl}_2\text{F}$	21	....	....	7	....	....	....
22	-41.4	$\text{CHClF}_2$	22	141	22	4	22	....	....
113	117.6	$\text{C}_2\text{Cl}_3\text{F}_3$	113	226	113	63	....	....	....
114	38.4	$\text{C}_2\text{Cl}_2\text{F}_4$	114	....	....	....	....	....	....
142B	12.2	$\text{C}_2\text{H}_3\text{ClF}_3$	142B	101	....	....	....	....	....
152A	-12.4	$\text{C}_2\text{H}_5\text{F}_3$	152B	100	....	....	....	....	....

Carrene-7 is an azeotropic mixture of 73.8% of 12 and 26.2% of 152A.

"Freon" is the trade name of Kinetic Chemicals Div. of du Pont de Nemours & Co., Inc.

"Genetron" is the trade name of General Chemicals Div. of Allied Chemicals & Dye.

Isotron is the trade name of Industrial Chemicals Div. of Pennsylvania Salt Mfg. Co.

Arcton is the trade name of Imperial Chemicals Industries of England and Canada.

Frigen (no record of name of manufacturer—Germany).

Algeon is the trade name of Fluoder, SRI, Argentina.

Kulene is the trade name of Eston Chemicals Div. of American Potash & Chemical Corp.

Refrigeration Problems  
And Their Solution

By Paul Reed

For Service and Installation Engineers

Common Names for  
Refrigerants (2)

The numbers used by Kinetic are not simply arbitrary and meaningless. From the number, we can tell the chemical composition of the refrigerant and consequently its chemical symbol and chemical name, as follows:

(1) In the number, the last figure on the right tells the number of fluorine atoms in the molecule.

(2) The next figure to the

left, *less one*, tells the number of hydrogen atoms in the molecule.

(3) The third figure to the left (if any) *plus one*, tells the number of carbon atoms in the molecule. If there is no third figure, it is zero, and zero plus one is one, so there is one carbon atom in the molecule.

EXAMPLE 1:  
REFRIGERANT 12

(1) 2 means that there are 2 fluorine atoms.

(2) 1, less one, that is, zero, means that there are no hydrogen atoms.

(3) There are only two figures in the number, so the one on the left must have been 0, and 0 plus one equals one. Therefore, there is one carbon atom.

Thus, the Refrigerant 12 molecule contains one carbon atom (represented by 0), no hydrogen atoms (represented by 1) and two fluorine atoms (represented by 2).

But what about the chlorine in Refrigerant 12? It too can be determined as follows:

Add the number of fluorine and hydrogen atoms, in this case 2 (2 + 0). Thus subtract the 2 from 4 (if there are two figures in the refrigerant number) and the remainder, 2, is the number of chlorine atoms; or rather it is assumed that they are chlorine atoms unless otherwise indicated, as explained later.

Thus the Refrigerant 12 molecule consists of 1 carbon, 0 hydrogen, 2 chlorine, and 2 fluorine atoms, so its formula is  $\text{CCl}_2\text{F}_2$ , and its chemical name is dichlorodifluoromethane, for di means two and methane means that there is just carbon atom in the molecule.

EXAMPLE 2:  
REFRIGERANT 113

(1) 3 means 3 fluorine atoms.

(2) 1 (1 - 1) means no hydrogen atoms.

(3) 1 (1 + 1) means 2 carbon atoms.

To find the number of chlorine atoms we add 3 (fluorine) to the 0 hydrogen and subtract this 3 from 6. In this case we use 6 instead of 4, for there are 2 carbon atoms. When there is one carbon atom we use the figure 4; when there are 2 carbon atoms, we use the figure 6. Therefore, in the molecule of Refrigerant 113 there are 2 carbon atoms, 3 chlorine atoms, and 3 fluorine atoms, so its chemical symbol is  $\text{C}_2\text{Cl}_3\text{F}_3$ . Its

(Continued on next page)



**Non-Waxing — Foam-Resistant —**  
unexcelled for all low-temperature applications.

**Unmatched Stability —** under all conditions of refrigerant dilution, heat and pressure.

**Specified:** by nearly all original equipment manufacturers.

**Your Wholesaler Has It!**

Distributed nationally by Virginia Smelting Company, 115 Jefferson St., West Norfolk, Virginia.



ESOTO-KINETIC CHEMICALS "FREON" REFRIGERANTS-V-METH-L  
CAN-O-GAS-PERMAGUM-PRESTITE TAPE-KWIKWRAP-SUNISO  
REFRIGERATION OILS-WATER TREATMENT CHEMICALS  
Available in Canada and many other countries

**AIRO** stands for

Speedy, dependable,  
world-wide service.  
Air Conditioning and  
Refrigeration parts,  
equipment, supplies.  
Write for Wholesale  
Catalog No. 56

**AIRO SUPPLY CO.**

2732 N. Ashland Ave., Chicago 14, Ill.



## G-E Room Conditioner Line--

(Concluded from Page 1, Col. 2) cooling to a reverse-cycle 'heat pump' position to maintain the selected temperature regardless of outside weather conditions. "When outside temperatures fall below 42° F., the 'heat pump' is automatically switched off and an electrical resistance heating element begins operation, providing adequate supplemental (and in some cases primary) heating on the coldest days."

### Electronic Filter

The electronic filter is an optional attachment affording effective filtration of the most minute particles, according to G-E. It is fastened just behind the front panel of the Thinline room air conditioner. It adds only 2½ in. to the regular Thinline depth of 16½ in. and in no way changes the attractive front appearance, the company said.

The new 1-hp., 115-volt model is one of two Deluxe Thinline units which offer comfort conditioning in situations where adequate wiring is a problem. Like its companion, the 7½-amp., ¾-hp. model, "it provides maximum cooling performance within its current requirements," G-E stated.

### Heating, Cooling Unit In 'Thinline' Series

General Electric's All-Weather room air conditioner, which heats as well as cools, has been re-designed in the Thinline style for 1957.

"Engineered for year-round comfort conditioning, the new unit, like previous All-Weather models, cools and dehumidifies in hot weather, heats on cooler days," it was pointed out.

"When the thermostat is set at the desired position, the unit automatically switches from

cooling to a reverse-cycle 'heat pump' position to maintain the selected temperature regardless of outside weather conditions.

"When outside temperatures fall below 42° F., the 'heat pump' is automatically switched off and an electrical resistance heating element begins operation, providing adequate supplemental (and in some cases primary) heating on the coldest days."

Custom Thinline models include ¾ and 1-hp. units, "all featuring two General Electric developments, simplified linear controls and three rotatable air directors," the company said.

"Operational features include high cooling capacity, reduced noise levels, and high dehumidification, ventilation, and recirculation capacities. An automatic accessory timer, available



MEASURING 16½ in. from front to back, this 1957 G-E "Thinline" custom model room air conditioner has a removable grille which may be spray painted in any of six colors to accent decorating schemes.

optionally, provides seven-day programming of operation for maximum efficiency and minimum cost."

Deluxe Thinline models include a ½-hp.; a new ¾, 7½-amp. model; a standard ¾ hp.; the new 1 hp., 115 volts; and a



HERE IS the G-E 1957 "Deluxe Thinline" room air conditioner which may be mounted in the upper window sash as shown, in lower sash, through the wall, or pivoted from one edge to facilitate window cleaning.

standard 1 hp. 230 volts, as well as a 1½ hp. 230 volts. The 1½-hp. model is the most powerful General Electric Deluxe Thin-

line room air conditioner yet manufactured, according to the company.

The modern styling of these lower-cost models bears a strong "family resemblance" to the Custom Thinline models, but the Deluxe units have exposed air directors and a high impact horizontal-banded lower grill with an open control panel, it was stated.

Models and specifications were announced as follows. B.t.u./hr. capacities are in accordance with ARI Standard 110-56, G-E said.

CUSTOM			
Model	Hp.	Voltage	B.t.u./Hr. Capacity
R-52P	¾	115-230	7,700
R-72P	1	230	10,100
ALL-WEATHER			
R-53P	¾	230	7,400
R-73P	1	230	9,900
DELUXE			
R-31P	½	115	5,500
R-41P	¾	115	6,600
R-51P	¾	115-230	7,500
R-61P	1	115	9,000
R-71P	1	230	10,100
R-101P	1½	230	13,350

## Facts to help increase your sales!

### Each issue of "Sales Points" features...

Technical information, market data and selling tips. "Sales Points" is published quarterly as the house organ for Du Pont's "Kinetic" Chemicals Division. Its aim—to help you sell more equipment through better merchandising. You'll receive each issue free if you fill in and mail us the coupon.

#### TECHNICAL INFORMATION

News of unique applications of "Freon" refrigerants in refrigeration and air conditioning.

Tips for service men.

Interesting problems with solution.

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Information from Du Pont market research studies.

#### SALES MATERIAL

Stories of novel and successful sales approaches.

Information on improved selling techniques.

#### PLUS YOUR CHANCE TO WIN A CASH PRIZE

Salesmen—Submit the best answer to a featured objection buyers throw up to salesmen trying to close a sale.

Service men—Submit ideas to keep the "Why is it?" cartoon series going.

You can get on the mailing list to receive "Sales Points" quarterly. Just fill in and mail us the coupon—there's no obligation.

And when you need a refrigerant, be sure to ask your wholesaler for "Freon" refrigerants. Pure, acid-free and dry—"Freon" is your best refrigerant buy for any size and type of air conditioning or refrigerating equipment.



Always ask for "Freon"

1931
1956

25 years of  
**FREON**  
SAFE REFRIGERANTS

"Freon" is Du Pont's registered trademark for the fluorinated hydrocarbon refrigerants.

BETTER THINGS FOR BETTER LIVING  
THROUGH CHEMISTRY

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E. I. du Pont de Nemours & Co. (Inc.)  
"Kinetic" Chemicals Division  
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Please add my name to your mail for "Sales Points".

Name.....Position.....

Company.....

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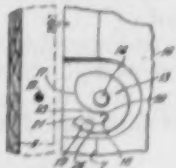
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# PATENTS

Week of June 12  
(Concluded)

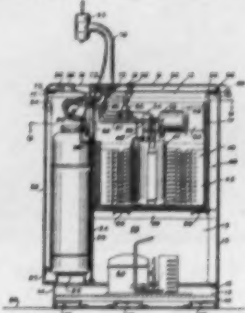
2,750,219. LATCH MECHANISM.  
Howard A. Blean, Chicago, Ill., assignor to Admiral Corp., Chicago, Ill.



1. A door latch having a follower for the door and a latch for the door opening disposed opposite to the follower, said latch comprising a plate pivotally supported and freely revolvable about a fixed axis, a curved tongue on said plate providing a spiral-shaped channel between said tongue and said plate having an open throat at one end in spaced relation to said axis and extending spirally inward relative to said axis to a stop surface formed on the end of said channel opposite to said throat, said tongue being formed with a curved follower engaging surface which is curved about the pivot for the latch, said plate having a gravitational center spaced from said axis being operable to normally present said follower engaging surface to said follower, the radius of said follower engaging surface relative to said axis being greatest at a point spaced from the end of the tongue and less on either side thereof, said tongue arranged to move to a follower engag-

ing position upon rotation of said plate and said curved follower surface arranged to engage and retain said follower upon movement of said plate to follower engaging position.

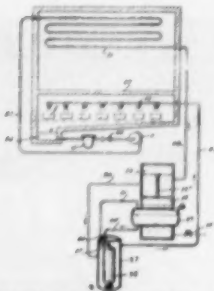
2,750,076. BEVERAGE DISPENSING APPARATUS. Frank Welty and Raymond Welty, Youngstown, Ohio, assignors to Carbonic Dispenser, Inc., Canfield, Ohio, a corporation of Ohio.



1. In a self-contained beverage dispensing cabinet of the type having means to supply separate carbonated water and flavoring syrup components to a common dispensing valve the combination of a cabinet, a vertical dividing wall in said cabinet dividing the same into front and rear sections, means comprising a supporting platform in said front section, a retaining lip extending upwardly from said platform and defining with said dividing wall a container-receiving space, a plurality of generally flat-bottomed cylindrical containers for flavoring syrup positioned in side-by-side relation in said space, said lip being positioned forwardly of the front edge of said platform and defining therewith a recess for the reception of the forward edges of said containers upon tilting movement thereof, flexible conduit means connecting said containers and terminating on said vertical dividing wall, rigid conduit means positioned on said wall being available to connect said flexible conduit means to said valve, and flexible members connecting the upper portions of said flat-bottomed containers with said cabinet to limit the extent of outward movement of the upper portions of said flat-bottomed containers with respect to said cabinet, said retaining lip and dividing wall being adapted to substantially prevent movement of the lower portions of said flat-bottomed containers upon movement of the upper portions thereof outwardly of said cabinet, and said flat-bottomed containers sitting levelly on said platform above and in spaced relation to said recess whereby upon tilting movement said flat-bottomed containers are in a straight-line contact with said platform preventing rolling movement of said cylindrical containers.

rator, condenser and compressor, fan means for flowing air in thermal exchange relationship with said condenser, and safety means for preventing pressures in said system low enough to cause freezing of the water, and safety means including thermostatic means for stopping said fan means in response to a reduction in the ambient air temperatures below approximately 60° F.

2,750,754. APPARATUS FOR REFRIGERATION BY MEANS OF AQUEOUS SOLUTIONS. Theodor Emil Schmidt, Ettingen, Baden, Germany. Application Feb. 11, 1952, Serial No. 271,006. Claims priority, application Germany Feb. 12, 1951. 7 Claims. (Cl. 62-2.)



3. A refrigeration system, comprising, in combination, container means adapted to contain ice; a first container; outlet conduit means connected at one end thereof to said first container and at the other end thereof to said container means, and adapted to supply an aqueous solution contained in said first container to the ice contained in said container means; first inlet conduit means connected at one end thereof to said first container means, and adapted to supply to said first container an aqueous solution the concentration of which has been reduced by contact with the ice in said container means; a second container adapted to contain a substance for increasing the concentration of the aqueous solution; supporting means for said containers supporting said second container at a higher level than said first container; a second inlet conduit means connected at one end thereof to said first container and at the other end thereof to said second container and adapted to supply to said first container an aqueous solution contained in said second container; conduit means connecting a portion of said first inlet conduit means located adjacent said first container, and thereby said first container with said second container and adapted to supply an aqueous solution to said second container, the concentration of said aqueous solution being increased by contact with the substance contained in said second container while said aqueous solution passes through said second container from said upper portion thereof to said lower portion thereof; pump means in said first inlet conduit means producing in said portion of said first inlet conduit means a hydraulic pressure higher than the hydraulic pressure in said second inlet conduit means; electric motor means during said pump means; a temperature-responsive contact means located in the vicinity of said ice-containing container means, and connected to said electric motor means for starting the same when the temperature in said vicinity exceeds a predetermined level; valve means mounted in said first container intermediate the interior of the same and said portion of said first inlet conduit means; and a floating body movably mounted in the interior of said first container and operatively connected to said valve means for actuating the same, said floating body being adapted to move in accordance with the concentration of the aqueous solution in said first container so that said first inlet conduit means is closed by said valve means when the concentration and the specific weight of the aqueous solution in said container differ from predetermined amounts.

(To Be Continued)

F. A. Olson of A-P Controls Dies  
MILWAUKEE—Frederick A. Olson, 40, credit and traffic manager at A-P Controls Div. of Controls Co. of America, died of cancer here after an illness of several weeks. He had worked at A-P for over 20 years.

# CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

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ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

## POSITIONS WANTED

SERVICE REPRESENTATIVE, preferably with manufacturer. Service experience with residential and commercial Frigidaire service organization. Nine years self-employed, past six years doing solely commercial and truck refrigeration. Am 31 years of age, will travel in the Midwest. BOX A5663, Air Conditioning & Refrigeration News.

## POSITIONS AVAILABLE

OPPORTUNITY FOR manufacturer's representative: To increase your earnings, sell a full line of freezers, beverage coolers, display cases, dual temperature reach-ins and walk-ins. We manufacture a quality line to meet competition. Territories now available, write HOWARD REFRIGERATOR CO., INC., 4475 Worth Street, Philadelphia 24, Pa.

WANTED—AIR conditioning engineer, who is thoroughly familiar with complete design of comfort air conditioning systems for a company that has been in business for over fifty years. We need additional engineers to handle ever increasing volume of business. State age, qualifications, background and salary expected. Reply to JOHN P. MURDOCH COMPANY, 3630 Haverford Avenue, Philadelphia 4, Pennsylvania.

WANTED IN Southern California competent refrigeration and air conditioning engineers, draftsmen and refrigeration fitters. Due to serious labor shortage the Refrigeration and Air Conditioning Contractors Association of Southern California has undertaken the responsibility of recruiting employees for members of the Association. Upon your inquiry setting forth general type of work we will forward to you an appropriate questionnaire. REFRIGERATION AND AIR CONDITIONING CONTRACTORS ASSOCIATION OF SOUTHERN CALIFORNIA, INC., 453 South Spring Street, Los Angeles 13, California.

SALES ENGINEERS experienced in small and large commercial and industrial air conditioning refrigeration equipment are required for expanded operations in Chicago and other Midwest sales offices. Some travel involved. Expenses, salary, and incentive. Apply only by letter giving full details as to background and experience. Replies confidential. Write T. J. Fyock, Personnel Manager, WESTINGHOUSE ELECTRIC CORPORATION, P.O. Box 510, Staunton, Virginia.

SALES REPRESENTATIVE wanted, age no barrier, for sale of new development in the air conditioning field to jobbers. This new product is one of the three major components of the refrigeration cycle and will completely change existing conventional field practice. It is extremely saleable and will reward a hard-hitting individual with above average earnings on a liberal commission basis. Exclusive protected territories. Previous experience in air conditioning, refrigeration, plumbing, or heating industries desirable but not essential. Engineering background helpful. The company offering this product is now the leading manufacturer of one of the three major components of the refrigeration system. Write now, giving us personal details as well as present activity to BOX A5659, Air Conditioning & Refrigeration News.

SALES MANAGER for revolutionary new development in basic air conditioning equipment by one of the leading manufacturers of air conditioning and refrigeration components. This new product is one of the three major components of the refrigeration cycle and has high sales appeal and potential. There is no similar item on the competitive market from the standpoints of cost, economy of operation, ease of installation and quiet operation. It is especially attractive to the replacement market. Write now, with personal details and experience to BOX A5671, Air Conditioning & Refrigeration News.

MANUFACTURER'S REPRESENTATIVES: Old established manufacturer of refrigeration accessories has opening for agents now calling on refrig-

eration wholesalers and manufacturers in Colorado, Kansas, Missouri, Utah, Wyoming and the Dakotas. BOX A5673, Air Conditioning & Refrigeration News.

SALES ENGINEER wanted to contact industrial concerns in northern New Jersey for York refrigeration and air conditioning equipment. Experience required; salary, commission, bonus; car necessary. BOX A5674, Air Conditioning & Refrigeration News.

FOR PAST twenty-five years, we have devoted our entire efforts to installation of air conditioning equipment from residential to three hundred tons capacity. Right now, we need one more experienced man for installation and service. Knowledge of Carrier equipment advantageous. Permanent, steady top pay. Ohio. BOX A5676, Air Conditioning & Refrigeration News.

ENGINEERS—COLLEGE graduates with experience for development, design and production engineering work on heat pump air conditioning systems and components. Unusual opportunity in growth business with substantial company located in northern New Jersey, metropolitan area. Salary commensurate with experience. Write details of background and experience in confidence to BOX A5677, Air Conditioning & Refrigeration News.

## EQUIPMENT FOR SALE

OUR PRICES have not gone up—Ajax Electric Ice-man—Complete new parts stock available. Immediate delivery. Many prices under factory list. Write for price list, AJAX PHILADELPHIA, INC., 3617-25 Lancaster Ave., Philadelphia 4, Pa.

THOUSANDS OF air conditioners are now equipped with Kesco automatic condensate water disposal pumps available at your local wholesalers in 10 and 20 foot heads 110 or 220 volts only 9" high, water inlet 5 inches from floor. Wholesalers write to KESCO PRODUCTS, P. O. Box 84, Springfield Gardens 13, New York.

GUARANTEED BRAND new condensing units at special closeout prices! S84LE or S88LE 1/4 h.p. \$34.40, S84LE 1/2 h.p. \$36.00, K3SIS 1/4 h.p. \$44.50. Motor compressor domes—S88 1/4 h.p. \$29.50, S84 1/2 h.p. \$31.00, S84 1/4 h.p. \$32.00, S84 3/4 h.p. \$35.00, S2S16 1/2 h.p. \$43.00, B1516 1 h.p. \$55.00, B32P16 1 1/2 h.p. \$60.00. Many other sizes and models at tremendous discounts. Order today or send for our special bulletins. MANN REFRIGERATION SUPPLY CO., 440 Lafayette Street, New York 3, N. Y.

BRAND NEW: Prominent brand truck blower units PHO13 F—\$270.00 ea. 30" x 120" x 1 1/2" cold plates 26" \$150.00 ea. D163 heat exchangers \$8.00 ea. Compressors: E 54—\$29.00 ea., E 55—\$42.00, E-57 \$50.00, 6 volt D. C. motors \$5.00 ea., 1 h.p. motors 220/60/3 Ph. \$58.00, 1/2 h.p. motors 208/60/3 Ph. \$30.00. CP200 valve \$7.00 ea. Truck units: only one each—100 MGN-E \$984.00 (110/220/60/1 Ph.). 200 MGN—\$1163.00, 150 NCA—\$1291.00 (230/60/3 Ph.). BOX A5672, Air Conditioning & Refrigeration News.

## BUSINESS OPPORTUNITIES

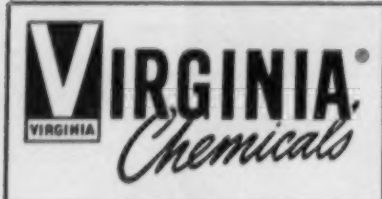
WANTED: RELIABLE and capable distributors for our air conditioning and refrigerating equipment. Good territories available. Full line of compressors, condensers, coils, coolers, controls, valves and fittings, pressure vessels, etc. Contracts include repairs and spare parts for equipment now in use. Profitable account. Address Department B, FRICK COMPANY, Waynesboro, Pennsylvania. Refrigeration Engineering Pioneers since 1882.

PARTNER NEEDED, air conditioning and heating experience. We have exclusive distributorship of the finest, established line of air conditioning and heating equipment. Entire Northeast Ohio territory, best location in the nation. Books open for inspection. Wonderful opportunity for right man with not too much investment. BOX A5651, Air Conditioning & Refrigeration News.

WANTED:—PRODUCTS or new product ideas that can be sold restaurant and institutional markets by reputable manufacturer with national dealer selling organization. Royalty or outright purchase. Confidential. Write BOX A5653, Air Conditioning & Refrigeration News.

## MISCELLANEOUS

ATTENTION SERVICEMEN: Send for free circulars and bulletins on refrigeration parts and equipment. Real money saving values: WALTER W. STARR; 2833 Lincoln Avenue, Chicago 13, Illinois.



## OPENINGS FOR SALES ENGINEERS

Excellent opportunities with well-established and progressive chemical manufacturer in selling high quality line of refrigeration chemicals to manufacturers and wholesalers of refrigeration parts and supplies.

Age 27-36 with at least 5 years sales experience. Compensation commensurate with background and ability.

Immediate opening in our Southwest territory covering Texas and Louisiana. Other locations are available.

Replies confidential. Write Personnel Manager, Virginia Smelting Company, West Norfolk, Virginia.

**Yours...CUSTOM QUALITY**  
**with Production Economy!**  
**PLASTIC • RUBBER**  
**Molded and Extruded Parts**

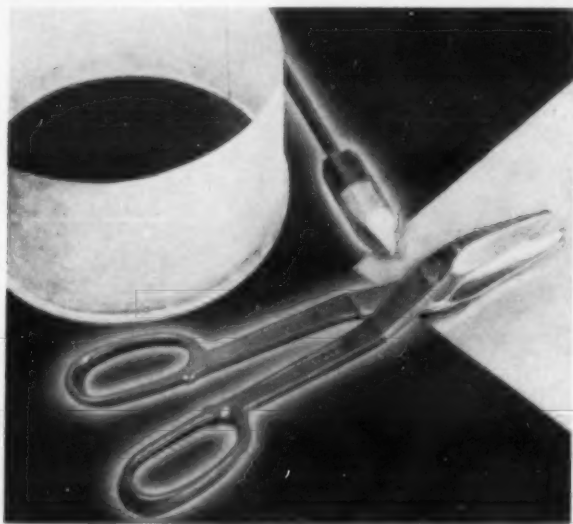
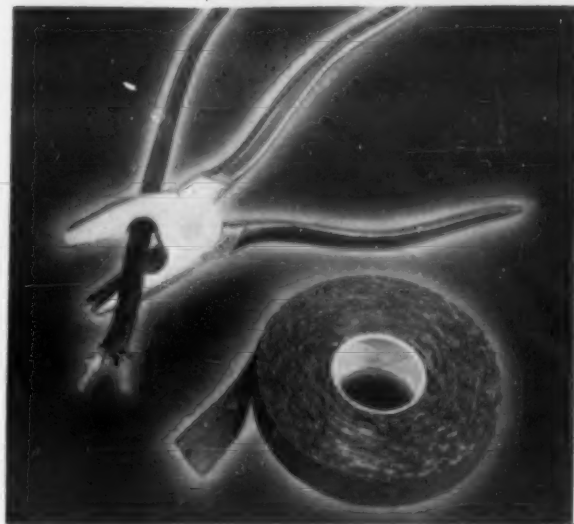
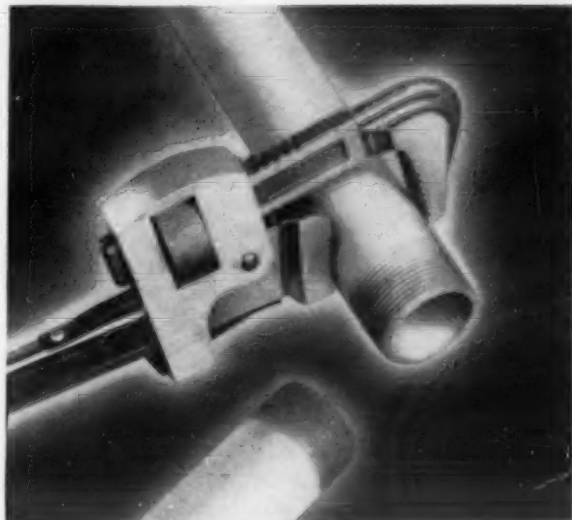


Request Geauga's new illustrated catalog. See how GI's advanced extrusion and molding techniques and finishing operations will give you better parts, and reduce your assembly costs. Design problem? Rely on GI's engineers for the cost-saving answer.

WRITE TODAY TO...

**GI GEAUGA INDUSTRIES**  
MIDDLEFIELD, OHIO





**Which type of distribution will bring you the best results in the residential air conditioning market?**



**F**ROM every side, there is speculation on who will do the bulk of selling in the residential air conditioning field. They've all been named, from appliance dealer to electrical contractor, from plumber to venetian blind distributor.

The reason for this speculation: The industry must expand its distribution rapidly to meet the growing demand. This rapid expansion is bringing in new air conditioning dealers from many sources. And the NEWS is the only medium that can keep up with

this changing distribution pattern.

The NEWS is investing tens of thousands of dollars to select from appliance dealers, plumbing contractors, heating contractors and others, those who will be the important air conditioning contractors of tomorrow. These new subscribers prove their interest in the field by *paying* for their NEWS subscriptions—to get the help, news, and information they need to sell and install residential air conditioning. These new groups are turning to the NEWS because an air conditioning

dealer is an air conditioning dealer, whether he was once a furnace man, a refrigeration man, or whatever.

What better showcase for your selling message than in the one business paper which *seeks out and finds* the men doing residential air conditioning as no other publication can! For more information on how the NEWS can keep you in touch with your primary market, call your nearest NEWS representative or write direct:

**AIR CONDITIONING  
& REFRIGERATION**

**NEWS**

The Newspaper of the Industry



The newspaper that carries more advertising by far than any other publication in the field.

450 WEST FORT STREET  
DETROIT 26, MICHIGAN

NEW YORK, 521 FIFTH AVE.,  
MURRAY HILL 2-1928-9, ROBERT M. PRICE.

CHICAGO, 134 S. LA SALLE ST.,  
FRANKLIN 2-8093, AL. SCHILDHAMMER.

LOS ANGELES, 4710 CRENSHAW BLVD.,  
AXMINSTER 2-9501, JUSTIN HANNON.

DETROIT, 450 WEST FORT ST.,  
WOODWARD 2-0924, J. B. SULLIVAN.



## RACCA Convention Program--

(Concluded from Page 1, Col. 3)

The Tuesday morning session will feature a series of five-minute talks on management subjects.

Following elections Wednesday morning, a business management forum on financing will be held. Guest speakers will include representatives of Dun & Bradstreet, a Miami bank, and the Small Business Administration. A member speaker will present RACCA industry survey results. A question-and-answer period will follow each talk.

A feature of the convention will be exhibits by manufacturers, suppliers, and others.

Among other events programmed are a luncheon Monday noon, reception and cocktail party Monday evening, and a Hawaiian Luau banquet and a water show Wednesday evening. An extensive entertainment and tournament program, which starts Nov. 23, has been arranged by the host association, ACRA of Florida.

A somewhat condensed version of the program follows:

### SATURDAY, NOV. 24

9 a.m.—Registration.  
Committee meetings.

### SUNDAY, NOV. 25

8:30 a.m.—Registration.  
9 a.m.—Directors' meeting.  
1-6 p.m.—Exhibits open.

### MONDAY, NOV. 26

8:30 a.m.—Registration.  
10 a.m.—General meeting. Introduction of convention chairman, Armand Cowan.

10:15 a.m.—Opening of convention—President Dudley M. Cawthon.

10:30 a.m.—Review of trade relations participation program.

10:45 a.m.—Member speakers: Sam Hamilton, "Our Individual Responsibility to the Industry"; Harvey Hottel, "Public Education Through RACCA 'Qualified Contractor' Program"; Wm. D. Moody, "Plans for Expansion and Proposed Cooperative Activity with Related Groups"; Arthur M. Palen, "Current Local Association Activities."

12:15 p.m.—Annual RACCA luncheon.

1:15 p.m.—Member speaker: Harvey Miller, Labor Committee recommendations.

1:30 p.m.—Guest speaker: Joseph F. Monahan, Refrigeration & Air Conditioning Div., United Association.

1:45 p.m.—Labor forum. Harvey O. Miller, moderator. Audience participation—panel of six.

3:15-6 p.m.—Exhibits open.

6:30 p.m.—Annual RACCA all-industry reception and cocktail party.

### TUESDAY, NOV. 27

9 a.m.—Opening of meeting. Introduction of moderator member R. B. Garlock.

9:15 a.m.—Introduction of panel members and audience selection of important management subjects.

9:30 a.m.—Five-minute talks by each panel member on industry subject: "Bid Depositories," Wm. D. Moody; "Profit Sharing Plan," H. O. Miller; "Maintenance and Service Agreements," Harvey W. Hottel; "Insurance and Hospitalization Plan," George T. Howe. Audience selected subjects: Frank Dean, Al Deitl, Jack Wanless, Charles Walling.

1-4 p.m.—Exhibits open.

### WEDNESDAY, NOV. 28

9 a.m.—Introduction of co-chairmen of nominating committee, introduction of candidates, election of president and six directors.

10 a.m.—Business management forum on financing. Chairman Cowan, moderator. Audience participation—four panel members. Guest speakers: representatives of Dun & Bradstreet, a Miami bank, and the Small Business Administration. Member speaker—RACCA industry survey results. Questions from audience after each talk.

11:50 a.m.—Message from president elect.

12 noon—Presentation of awards.

1-5 p.m.—Exhibits open.

6 p.m.—Annual RACCA all-industry banquet—Hawaiian Luau.

8 p.m.—Water show.

## Outside Vendors In 'Store of Tomorrow'—

(Concluded from Page 1, Col. 2) stick bamboo is the backdrop for the 116 ft. of self-service meat cases.

All meat is cut in the basement and then moved upstairs on a dumb-waiter to the meat department.

Some of the other features of this "store-of-tomorrow" are a 112-ft. "Food-O-Mat," a curved automatic supply line of products; a live lobster tank from which shoppers may make their own selections and have them steamed while they wait; revolving displays of party foods and cut flowers and potted plants; and 19 checkouts.

The store "even has the manager of tomorrow," it was reported. The general manager "will be wired for sound by an electronic pocket device similar to the Army's walkie-talkie, by which the general office personnel can summon his attention."

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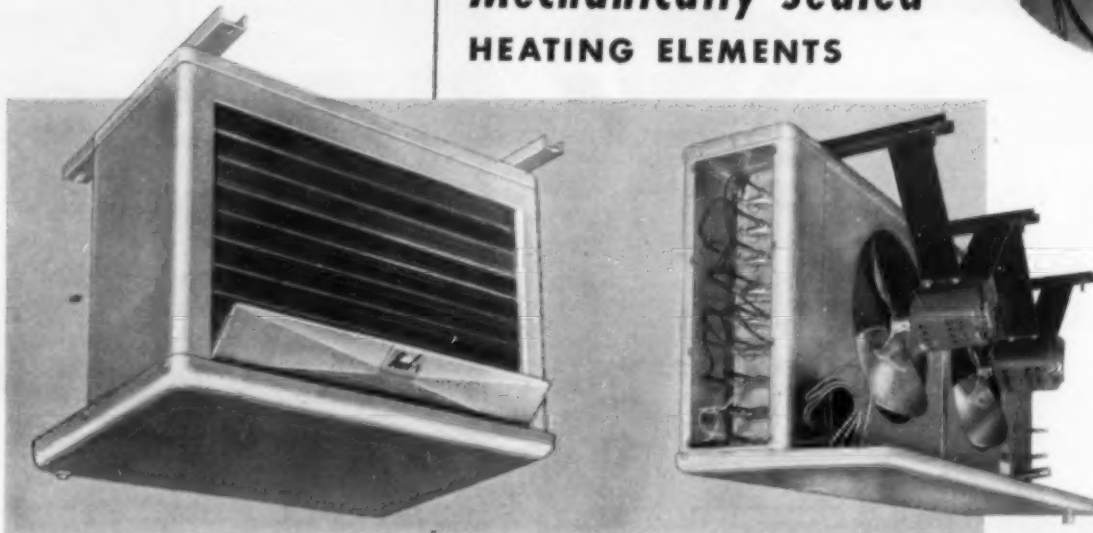
The store "even has the manager of tomorrow," it was reported. The general manager "will be wired for sound by an electronic pocket device similar to the Army's walkie-talkie, by which the general office personnel can summon his attention."

For example, yellow walls are used in the corner florist shop, and a natural-colored match-

## Defrost Electrically

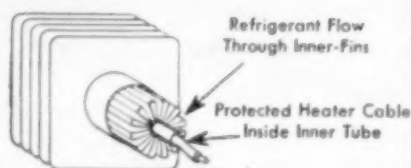
**SAFELY...SURELY**  
with DUNHAM-BUSH  
'ED' UNITS

NOW FEATURING  
**Mechanically sealed**  
HEATING ELEMENTS



### DRAIN PAN HEATING PAD

Conductive rubber electrical heating blanket provides quick, safe heat that prevents refreezing of water during defrosting. No heating wires... heating element is conductive rubber, hermetically sealed, shockproof and waterproof.



No defrost problems with these Dunham-Bush low temperature units! Mechanically sealed heating elements provide positive protection against entry of water into system. Defrosting is safe... sure... complete. And control kit (furnished) makes defrosting entirely automatic.

Inner-Fin® coil construction, exclusive with Dunham-Bush, permits units to defrost from the inside. Heat source for defrosting is a specially designed heater cable contained within the inner tube. Greater surface area which Inner-Fin construction provides assures rapid distribution of heat, quicker defrosting and minimum room temperature rise.

Units are available in capacities from 4500 to 36000 BTU/hr.

Write for complete information.

## WILL CONSIDER MERGER

Small California refrigeration products manufacturer, sales increasing faster than working capital. Not interested in sacrifice—business profitable, hard-hitting management, excellent labor relations, plus outstanding products.

Write BOX A5675,  
Air Conditioning and  
Refrigeration News.

## Dunham-Bush, Inc.

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AIR CONDITIONING, REFRIGERATION, HEATING PRODUCTS AND ACCESSORIES

For more information about products advertised on this page use Information Center, page 24.

**DUNHAM-BUSH**